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W. J. Reynolds

Vol. XI., No. 3.

MARCH, 1860.

New Series, Vol. 2., No. 3.

THE FARMER AND PLANTER



PRICE, \$1 A YEAR, ALWAYS IN ADVANCE.

INDUCEMENTS FOR SUBSCRIBING FOR NORTHERN AGRICULTURAL PAPERS.

Our readers will find a most capital article in this number, on "Humbugs," from our watchful correspondent "Rasp," which we hope will be read by every subscriber. How our friend "Rasp" got hold of *that* copy of the "New Arrangement," is a mystery to us, and, no doubt, will raise considerable of a "muss" in the sanetum of the Professor. (?) The publisher of the *Farmer and Planter* has also received a copy of the *Working Farmer*, containing an advertisement of the "New Arrangement," which, undoubtedly, was the one intended for circulation at the South alone, as it carefully omits the names of those *eminent divines* who are to enlighten the people of this section. For the edification of those who are to get the *Working Farmer* and *Banner of Light*, (*cheap*) we give them the benefit of the *light* the two advertisements have thrown upon the system of humbugging, which some of the honest (?) Editors of Northern Agricultural papers have adopted, to attain two ends, viz: to secure the patronage of the South, and disseminate incendiary productions among our people. If our good Farmers and Planters wish to read *such divine* literature, now is the time to get it *cheap*.

LOOK ON THIS PICTURE.

NEW ARRANGEMENT.

BANNER OF LIGHT AND WORKING FARMER FOR TWO
DOLLARS TWENTY-FIVE CENTS.

Our publisher has made an arrangement with the publisher of the *Banner of Light*, by which he will be enabled to furnish both papers to new subscribers, at the low price of *Two Dollars Twenty-Five Cents*—the subscription price, when taken separately, being Three Dollars.

The *Banner of Light* contains, each week, verbatim reports of sermons and lectures of eminent divines, also stories of sterling merit, general information, etc., and its size is greater than that of the *New York Ledger*, making a most desirable family paper. See advertisement in this paper.—Ed.

AND THEN ON THIS.

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There is no doubt that our friend "Rasp" got hold of the Northern advertisement, by mistake, as the copy we received does not hint that BEECHER and CHAPIN were to throw out their *Banner of Light* to the benighted Southern readers of the *Working Farmer*. We hope those who have purchased MAPES' Super-Phosphates will examine the article they receive, to see if the Professor has not hid his *light* under the—bags.

WHAT IS SAID OF THE FARMER AND PLANTER.

Scarcely a day passes that we do not receive kind letters of encouragement to continue the publication of our journal, with many promises of exertions to procure subscribers; but, with the exception of two gentlemen, we have received nothing but promises as yet.

If our friends are sincere in their promises, and really wish the *Farmer and Planter* continued, we hope they will strive to secure the Premiums we offer. We can assure them they will be worthy a trial, for each Premium will be ordered expressly for us, of full value, and decorated with chaste and appropriate designs. If ever there was a time when we needed help, it is now.

Below we give an extract from that excellent journal, the *Southern Homestead*, published at Nashville, Tennessee. We thank the Editor for his kind notice, and value his good opinion of our work very highly, for no one is more capable of judging, or more honest in his expression of opinion, than the Editor of the *Homestead*. We are truly pleased to hear that the people of Tennessee have "given up the practice of sending abroad for periodicals," and sincerely wish South Carolinians would not only do the same, but would read more of their own publications:

"Now, we scarcely know how to sympathize with our friend of the *Farmer and Planter*, for the people of our State have almost given up the practice of sending abroad for periodicals, when they can get such at home as are adapted to their wants. The citizens of Tennessee have not made as much noise about Southern Rights as those of South Carolina, but we shall think they are much more in earnest if South Carolinians allow the *Planter* to die out for the want of a patronage that is given to Northern agricultural papers, which it seems likely to do. It is a good work, and its publisher a true man, and both deserve a better fate."

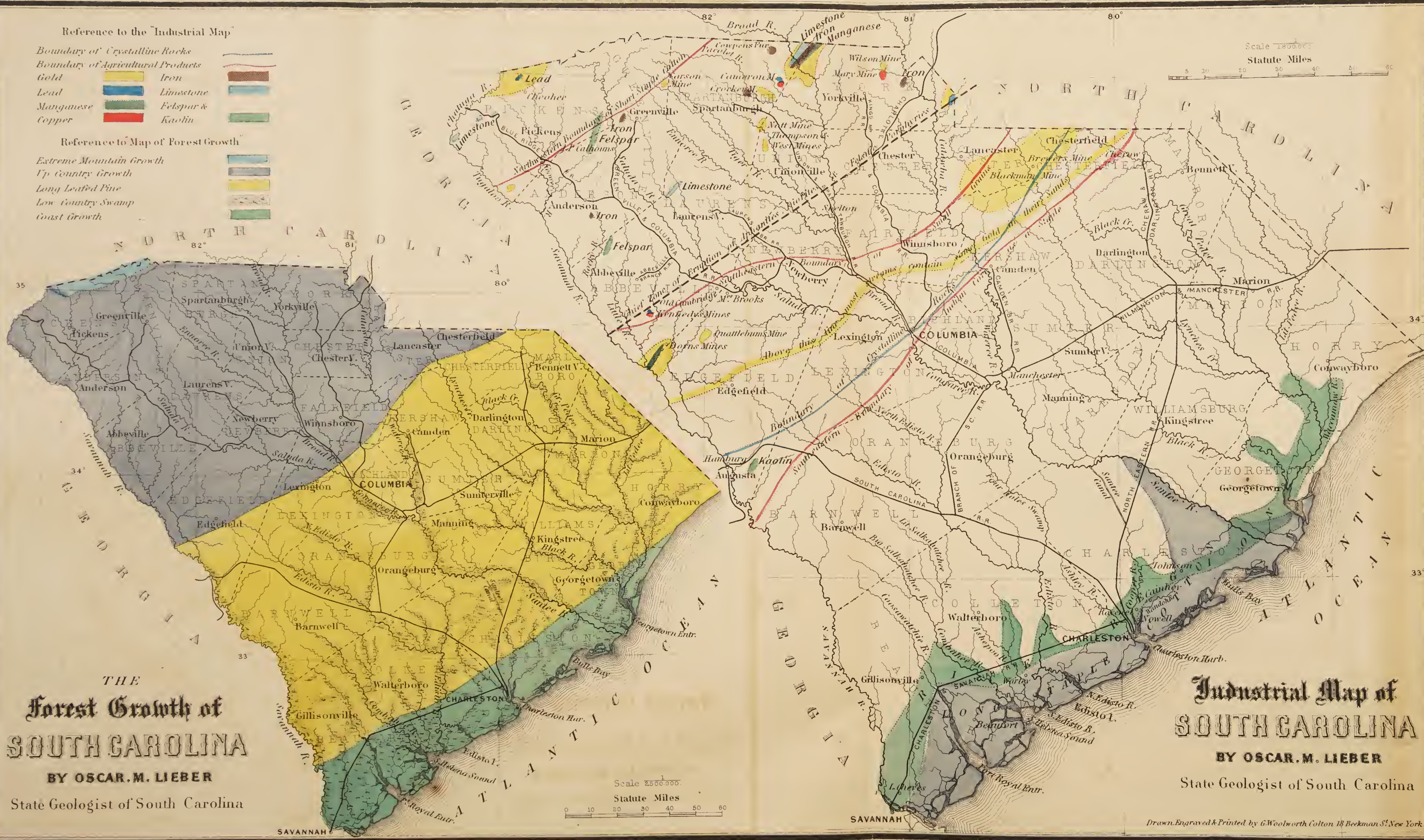
One gentleman writes:—"We don't intend to let so valuable a journal stop, not even with 4000 subscribers."

Another says:—"Can it be possible that the Farmers and Planters of South Carolina will suffer such a journal to die for want of the small sum of \$4000 annually, when its benefits to the State are probably twenty times that amount."

Again, a gentleman of intelligence, and a practical Planter, in Alabama, says:—"I am a subscriber to six agricultural journals—four published at the South, and two at the North—and I candidly confess that the *Farmer and Planter* is decidedly the most valuable to me."

We could multiply these extracts to hundreds, but forbear.

Now, gentlemen, we highly appreciate your kind words, and, if our pecuniary affairs would permit, we would willingly continue our labors of love; but we require more than the praise of words to "keep the pot boiling."—Show us that you are sincere, by sending us good lists of subscribers, and we will make the journal still better.



Reference to the "Industrial Map"

Boundary of Crystalline Rocks

Boundary of Agricultural Products

Gold
Lead
Manganese
Copper

Iron
Limestone
Felspar &
Kaolin

Reference to Map of Forest Growth

Extreme Mountain Growth

Up Country Growth

Long Leafed Pine

Low Country Swamp

Coast Growth

Scale 1:800,000

Statute Miles

5 10 20 30 40 50 60

Scale 2:500,000

Statute Miles

0 10 20 30 40 50 60

THE Forest Growth of SOUTH CAROLINA

BY OSCAR M. LIEBER

State Geologist of South Carolina

Industrial Map of SOUTH CAROLINA

BY OSCAR M. LIEBER

State Geologist of South Carolina

Drawn, Engraved & Printed by G. Woolworth Colton 18 Beekman St. New York.



VOL. XI.

MARCH, 1860.

NO. 3

R. M. STOKES, }
PROPRIETOR.

COLUMBIA, S. C.

{ NEW SERIES
Vol. 2, No. 3.

INDUSTRIAL MAP OF SOUTH CAROLINA.

The Natural Resources, Forest Growth, and Agricultural Products of the State. By OSCAR M. LIEBER, State Geologist of South Carolina.

A cursory notice of those peculiar features of South Carolina, which are connected with her agricultural and mineral wealth, will scarcely fail to interest even distant readers. Under this impression, I, therefore, now beg leave to present a map, prepared for the fourth annual report on the geognostic survey of South Carolina,* on which I have represented the zones of the different agricultural productions, and the localities of different minerals of value. On a smaller map on the same plate, the areas of indigenous forest growth are exhibited.

Maps of this description are capable of throwing so much light upon the occupation, habits, commerce and prospects of a people, and upon the internal and external importance of a country, that it is not unnatural to express surprise at the comparatively few and meagre contributions of the kind which our confederacy has hitherto furnished. At all events this deviation from the prescribed, or at least adopted, schedule of ordinary geognostic reports is sufficiently excusable, upon the grounds of the importance of the subject.

Since the survey with which I have now been occupied for four years, has been brought to a sudden end, by the action of our Legislature at its last session, the pleasure afforded me in presenting, at a glance, the general character of our present and prospective industrial wealth, is greatly increased.

The plate thus offered scarcely demands any very extended explanation; but still a brief communication should accompany it.

In glancing over the map, the reader will very soon be struck by the fact that, crossing the State, near the centre, in a northeasterly direction, several lines appear in close proximity, and thus divide the State into two sections. These lines are:

1. The boundary of the crystalline rocks.
2. The boundary of the pine barrens.

3. The boundary of corn as a staple.

To these we might also add, as closely approximating to them:

4. The lower boundary of small grain.
5. The line above which gold occurs.

It is easily conceived that the coincidence of a number of boundary lines, of such importance in their direct connection with practical pursuits, must exert very powerful influences upon the character of the inhabitants of the two regions thus separated—an influence which is observable in the occupation, habits, thoughts, standard of education, and even politics, of the two sections; for all of these are, in most instances, to a greater or less extent, the result of circumstances connected with the physical configuration of a country, its climate and natural capacities. This difference has always been acknowledged, and hence our State has, in common parlance, long been divided into the Up-Country and Low-Country, although the separating line has never been very clearly defined.

The mineral resources of the State, inasmuch as they enjoy priority in origin, should very properly receive the same in description.

The geological survey has not yet advanced sufficiently far to enable me to offer a geological map of the entire State, but it is scarcely too early to attempt to lay down the areas of our chief mineral resources. Even there, however, we are forced to confine ourselves chiefly to those capable of exportation. The different varieties of building materials, (the superb granite of Columbia, the red sandstone of Chesterfield, etc.), soapstones, clays, marls, etc., etc., it would be next to impossible to notice with precision.

Gold is at once perceived to be our most widely distributed metal. Many of its occurrences I have, however, not deemed of sufficient importance to notice.

The chief gold regions of our State are found near the junction of the dividing line of Edgefield and Abbeville Districts with the Savannah River, (embracing the justly famous mine of Mr. Dorn); and again in the southern part of Lancaster District,

* Not yet published.

extending into Chesterfield (embracing the Brewer, Hale, Blackman, Stevens' and Belk's mines and others). From the geognostic, as well as geographical features of the two regions, it is probable that they were originally connected, and that their separation is due to the denuding influences of the Saluda, Broad and Wateree Rivers, and their tributaries.

Another somewhat conspicuous gold region appears on the western slope of King's Mountain, in York, Spartanburgh and Union, embracing the Martin deposit mine, the Darwin Mine and others, although more prominently distinguished in North Carolina by the King's Mountain Mine. In Union we also perceive another auriferous locality on the Paeolet, embracing the Thompson and West Mines, the Nott Mine and others, all of which are vein mines.

In the farther western portions of our State, no veins have yet been profitably worked for gold, but gravel deposits have occasionally been opened with success. As such I would particularize the Carson Mine in Eastern Greenville, and the Cheohee Mine in Northern Pickens. Still it should be remembered that deposits of this description are necessarily finite. For a while they may yield profit; but the operations must be stopped in time to avoid unnecessary outlay.

The gold veins are of very different kinds. At least three distinct types may be distinguished; but this is not the place to enter upon their description.* Suffice it therefore to say that here, as elsewhere, in none of them can the gold be profitably worked to any very extraordinary depth. One variety of veins entirely gives out in depth; another is restricted to a particular country rock, which is itself of no very remarkable diameter; and the last, though auriferous as far as any exploration as yet extends, contains the gold farther down in a shape inaccessible to the method of extraction ordinarily in vogue, while the lead or copper make their appearance.

Copper has not yet been exported by South Carolina. The Cameron Mine in northeastern Spartanburgh, and the Mary Mine in York District, it is to be hoped will, before long, commence shipments of this metal. Copper is also found in Edgefield, Abbeville and Lancaster. The Cameron Mine, although at a future day it will probably be most conspicuous for its copper, is at present of more importance with regard to—

Lead. Indeed, it is the only mine in our State, which has hitherto furnished any marketable quantity of that metal. Lead, however, occurs also in Pickens and Abbeville. Very small quantities have also been found in Lancaster, but the veins have not been opened and explored.

Bismuth is found at the Brewer Gold Mine in Chesterfield, but has not yet been worked.

Manganese occurs on King's Mountain, in the shape of a pyrolusite-bearing bed of the talcose slate. As yet it has not been found in sufficient purity for

export. At Mr. Dorn's Mine, in Abbeville, within a short distance of the gold vein, a superb body of psilomelane, associated with pyrolusite, is observable, sometimes of a width of 50 feet, and even 100, with a perfectly vertical dip. This is probably one of the finest manganese mines in the world, although now lying idle.

Iron abounds on the western slope of King's Mountain. The most admirable magnetic and specular ores occur there in inexhaustible quantities.—The production cannot, however, compare with the quantity of material, owing to the fact that coal does not occur near it, and that the timber is becoming scarce. The ores are itabirite, specular schist, and catawbarite, which occur as true rocks, belonging to the itacolumitic system. At other points in the State, iron has occasionally been produced from limonite ores: but now all these furnaces have ceased operations, the railroads making foreign iron too cheap to admit of competition, and the maintenance of fences around the fields having consumed the timber.

Limestone appears in York, Spartanburgh, Laurens and Pickens, and for local consumption, is worked with profit.

Kaolin is found in great purity in Edgefield District, where it is employed for porcelain and chinaware, while the

Feldspar, needed in the manufacture of the same articles, is met with in great abundance in Eastern Pickens, and in Anderson.

On the map I have, in addition to these substances, noted the marl region, traced the boundary of the metamorphic region, and the main zone of eruption of aphanites, diorites and felsitic porphyries, since these latter rocks, and the soils which they yield, are highly important in an agricultural point of view; and, since also they influence the geognostic characters of the Up-Country very materially.—Within the main zone of eruption, the strike of the individual dykes is northeast. On either side their strike is northwest; a feature which is not only highly interesting, but which is accompanied by local influences upon the stratified rocks traversed, of no inconsiderable importance. In some places the irregularly shaped eruptive masses have intruded themselves in such a manner as to cause great variations in the otherwise uniformly northeasterly strike of the slates. The erevices produced by the upheavals are, in consequence, in such cases variable in their direction, and thus in the vicinity of these dykes the metalliferous veins do not always present their usual course, which is parallel to the axes produced by elevation and depression.

There is a considerable variety of veins in South Carolina, which may generally be distinguished with ease, owing to marked differences in the structure of the gangue, its varying admixtures, or the peculiar characteristic shape of the crevice. Some of these types are metalliferous, and others, as far as we know, entirely barren. Almost all of them occupy definite positions, or rather distinct areas, or belts, whose general direction is dependant upon our great Southern mountain chain. These belts overlap one another, but may be traced with very great accuracy. There are a few vein types which are confined to certain rocks, and which are therefore

* The interested reader will find more on this subject in the writer's official reports, and in an article of his "*Der Itacolumit u. seine Begleiter*," in Cotta's Gangstudien, vol. III. Freiberg.

dependant upon the presence of the latter, being omitted where erosion has removed their respective countries.* A close examination over a large portion of our State establishes the perfectly developed succession of rocks to be from below:—gneiss or grey granite, hornblendic schist, micaceous schist, talcose schist, argillaceous schist, itacolumitic series and limestone. To these may be added the red sandstone, (the same which underlies the North Carolina coal beds), and the cretaceous and tertiary formations. With regard to those enumerated above, it is scarcely necessary to remark that intercalations of other rocks may occasionally occur, without affecting the regular order of distinct varieties. Undoubtedly far too little attention has been paid in the last half century to such very generally observable regular succession of those rocks, which Naumann terms *cryptogene*, but which are more frequently spoken of as *metamorphic*. Formerly, geologists had proceeded too far in one direction—now they but too frequently go as far on the opposite. From what has been said, it is evident that denudation must influence the presence of those veins very powerfully, the position of which is restricted to a certain rock.

Before we enter upon a brief notice of the areas of cultivated plants; some remarks on those of the indigenous growth will be proper.†

We distinguish five very strongly marked areas of natural vegetation:

- I. The extreme mountain growth.
- II. The general Up-Country growth.
- III. The pine barren region.
- IV. The Low-Country swamp growth.
- V. The littoral growth.

The extreme mountain growth is met with in Pickens and Greenville Districts. This belt is characterized by the—

Hemlock, or spruce pine. *Abies Canadensis* (Michaux)
 Northern, or white pine... *Pinus strobus*. “
 Mountain laurel..... *Rhododendron maximum*. “
 Cucumber tree..... *Magnolia acuminata*. “
 Long leaved cucumber } *Magnolia auriculata*. “
 tree }
 Rock chesnut oak..... *Quercus prinus monticola*. “

These plants follow in an increasing downward range very much as here exhibited. Thus the hemlock does not extend as far downwards as the northern pine. Farther up, in the higher mountains of North Carolina, we find also the table mountain pine (*pinus pungens*), and the black birch (*betula lenta*), neither of which I have found in our State.

The general Up-Country growth presents among its characteristic trees the—

Spanish Oak..... *Quercus falcata* (Michaux)
 Black walnut..... *Juglans nigra* “
 Black Oak..... *Quercus tinctoria* “
 Chesnut..... *Castanea vesca*, “
 Scaly barked hickory..... *Carya Alba*, (Elliot).
 Slippery elm..... *Ulmus fulva*, (Michaux).
 Calico bush, or ivy..... *Kalmia latifolia*, “
 Red cedar..... *Juniperus Virginiana*, “
 Short leaved pine..... *Pinus tæda*, “

* See Report III., p. 54, where a skeleton section is given, showing the position of the vein-types.

† For the Botanical names, I am indebted to Dr. John Le Conte.

To these we may add, as more widely diffused here, than lower down the country—

Chincapin..... *Castanea pumila*, (M.)
 Hickory (common)..... *Juglans* (*Carya*) *tomentosa*.
 Red Oak..... *Quercus rubra*.

The pine barren zone, which commences but little above the boundary of the tertiary formation, and extends thence to the coast, wherever the soil is sufficiently sandy to favor its growth, is characterized by the long-leaved pine (*pinus palustris* (E.) *p. australis* (M.)), and a much greater abundance of black jack oaks (*quercus ferruginea*), and scrub oaks (*q. Catesbæi*). The former, often designated as the round-leaved black jack, is characteristic of soil containing some little moisture, while the latter, better known as the forked-leaved black jack, prevails only on the most arid soils of all. Sycamores (*platanus occidentalis*), persimmons (*diospyros Virginiana*), red-bud trees (*cercis canadensis*), sweet gums (*liquidambar styraciflua*), sassafras (*laurus sassafras*), water oaks, (*quercus aquatica*), and suple-jacks (*zizyphus volubilis*), are more abundant here than further up the country, although with some of these it is difficult to give any portion of the State the preference.

The Low-Country swamp growth is not bounded by any lines, indicative of climate, as far as the area of South Carolina extends. It is peculiar to the swamps and low grounds, which ramify through the region just described. But so extensive are our swamps, and so peculiar is a large part of their vegetation that the latter requires to be defined separately. We find here the cypress (*cupressus disticha*), the glorious magnolia (*magnolia grandiflora*), the tupulo (*nyssa grandidentata*), the common cane (*arundinaria macrosperma* (M. & Y.) *Arundo gigantea*), the grey or long moss (*Tillandsia usneoides*), the Spanish bayonet (*Yucca gloriosa*), the winter whortle-berry (*vaccinium arboreum*), the white bay (*magnolia glauca*), among the most striking plants of these regions. The saw-palmetto, (*chamærops serrulata*), in some cases, extends up the river swamps far into the interior. I have seen it on the Savannah as high up as Abbeville District, although it is certainly one of the plants more properly belonging to

The littoral growth.—This vegetation is confined to a belt of country running parallel with the coast. The peculiar plants extend to different distances into the exterior. Thus the cabbage palmetto, (*chamærops palmetto*), rarely occurs more than ten miles from salt water, while the live oak (*quercus cirens*) extends as far as forty. These are the two most characteristic trees of this zone. Others, which are more or less distinctive, are the loblolly bay (*gordonia lasianthus*), the American olive, (*olea Americana*), more abundant in Georgia than with us—Georgia bark, (*pinckneya pubens*), pond spice, (*laurus geniculata*), and gall-berry (*prinos glabra*). In addition to these the swamp growth in low grounds, and the pine barren growth in sandy places, extend over the entire littoral belt.

It must be self-evident to the reader, that a State, exhibiting so great and striking a variety in her natural vegetation, and such very decided differences in her soils, should also be enabled to present a great diversity in the agricultural pursuits of her in-

habitants. No doubt this variety is increased, or is, I would say, more strongly emphasized on account of the peculiar geographical position of South Carolina. We live in a latitude where the influences of elevation upon the climate are more decided in their effects upon vegetation, than farther north or south; so that from the mountains to the coast we have the most strongly marked terraces of artificial vegetation. Along our seaboard we find the semi-tropical regions of long-stapled cotton and rice. Then we arrive at the boundary of the great short-stapled cotton zone, which extends up to the line of Pickens, although there, along its northwestern limits, the summer season is too short to permit its successful cultivation, except on new or highly fertilized lands. Near the boundary of the tertiary we find the lower margin of the belt where corn is grown for the market. Further up we arrive at the lower boundary of the small grain belt. We have, therefore, distinctly defined regions for the production of all the plants grown, from the climates of the north to those verging upon the tropics. When the small size of our State is remembered, it will be admitted that few regions are so largely favored by nature. We have not yet fully developed our agricultural advantages by rendering the zones, alluded to, more precise and numerous—making them dependant both upon climate and normal differences of soil. But this will come in time. The profits of grape culture will soon turn more general attention in that direction. The increasing price of stock will, before long, establish its raising as another source of agricultural prosperity, and so also will it be with other matters, to which it is here unnecessary to attend.

I have already once before, through the pages of the *Farmer and Planter*, endeavored to invite the attention of our agriculturists to the fact, that differences of soil are by no means the sole causes of variable fertility. Difference in the mechanical constitution of the soil (the quantity of water it contains for instance) and in the climate of the region, are at least fully as important considerations and let me here parenthetically add, that a deficiency of individual experience in practical agriculture cannot be adduced as an argument against the discussion of topics of this particular kind. Many matters in agriculture cannot be satisfactorily treated except by the practical experimenter. But this does not belong to that class. Let me suggest a few questions, which may more clearly express the idea intended to be conveyed. Would any reasonable person expect that a certain soil should produce cotton in Maine because the very same soil yields an abundant crop of that plant in our State? Or, again, can it be expected that a peculiar soil, occurring both on high dry ridges and in a low and wet bottom, should produce the same plant with equal success, in both places? These are simple questions, easily answered, and yet, from the tenor of many articles on agricultural subjects, we would be obliged to believe that the authors intended to inculcate the belief that the same soil, under all circumstances, must produce the same plant with equal results! The folly of such an idea is very forcibly exhibited by the regularity of the parallel zones, which have just been held up to view. Let us take

another instance—a simple one—but nevertheless one which I think is quite satisfactory. I allude to the weed which is so common in a large portion of our State—the *hog-weed*.* Known by this name, that plant is met with in every old field about Columbia, and certainly no one would point it out as an evidence of the peculiar richness of the soil; on the contrary, it abounds in the most sandy places. Yet this very weed is considered, in Abbeville, as one of the most reliable indications of a rich soil.—It is there known as *rich-land-weed*. And why does this difference exist? Simply because a plant, which, in the warmer climate of Richland District, can flourish on a poor soil, demands the best soil in the colder climate of Abbeville.

It is very certain that a close attention to this point must precede the more advantageous application of our lands. To a great extent, without any premeditated design, has the necessity for such distinction been established. Hence the various zones already observable. But, with the rule and the necessity admitted and established, we should hasten to define more accurately, to render more exact and precise as well as more numerous, those lines which mark the boundaries of the various cultivated plants.

Like other States, we still require that stability of habitation with our people, which is necessary to all permanent improvement in agriculture. It is a great misfortune to the older States that there is a West with cheap and fertile lands. But as we advance in time, as Western lands increase in value and our laboring force is gradually enlarged while rail-roads hurry the produce to market, equalizing its value over the whole country—then too more decided and lasting improvements will be made.

THE SOILS OF SOUTH CAROLINA.

The agricultural Capacity of the State and the Obstructions to its full Development.†

For purposes of practical consideration, we may divide the soils of our State into certain groups, which are easily distinguished without any preparatory scientific information. These groups would be the following:

- I. THE ALLUVIAL SOILS.
- II. THE ARENACEOUS SOILS.
- III. THE ARGILLACEOUS SOILS.
- IV. THE CALCAREOUS SOILS.

The alluvial soils necessarily abound most in the Low-Country, where less elevated ridges and broader river and creek bottoms afford the necessary space for its accumulation. In treating of the origin of the rice lands, in the chapter referring to changes on our coast in this Report, the general formation of these soils has already been indicated. They are in truth the cream of the land. The rich surface washings from the more elevated hills of the Up-Country have there accumulated. Every freshet, indeed every downward flowing drop of water, contributes its quota to their increase and enrichment. The denudation of the Up-Country and its drainage has but accelerated the action, and every gully

* *Actinomeris squarrosus* (?)

† Chapter X of Lieber's Report IV.

and bald hill-side in the State has aided in increasing their fertility. If the truth of an assertion can excuse its apparent irrelevancy in other respects, we might say that the Up-Country, since its cultivation was first commenced, has been going downstream! Its richest possessions we find in well-sifted purity in the vast swamps of the Low-Country.

And yet the rice region now affords almost the only exception to the utter abandonment of these rich soils for agricultural purposes. This is a sad thing to contemplate, and the question naturally forces itself upon our minds: Can this not be remedied? Can these fertile lands not be made available to the agricultural interests of the State? I think they can, to a very considerable extent, at least.

Let us first consider the peculiar circumstances of the case.

At an early period, before any extensive settlements had been made in the back-country, productive indigo plantation were dotted here and there, along the rivers, throughout a large portion of these tracks. Now they are inundated several times annually. I have ridden over an embanked road, near Pineville, high and dry above the adjacent swamp, and seen the axe-marks, made by boatmen during a severe freshet, as nearly as I now remember, some forty feet over head. This was, no doubt, an exceptional instance, both as regards the local depression of the swamp and the severity of the inundation, yet the mere fact is significant.

In such a case probably no remedy is at hand—but there are many spots where the swamp is less depressed, and where probably suitable arrangements might be made to guard at least against all ordinary overflows. I know of but one instance where the experiment has been properly made, and certainly there the results have been sufficiently satisfactory to induce the belief that others would have followed the example. I allude to the plantation known as "Mexico," belonging to Mr. Mazyck Porcher, in St. Stephens Parish, where a large body of the Santee swamp has long been profitably cultivated in long-staple cotton.

To make any considerable portion of these vast Low-Country swamps available to the agricultural interests of the State, is a question of time, and increased abundance of labor. No one, who has not himself visited the respective localities, could form any just idea of the amount of labor performed in perfecting the works connected with the ancient inland rice cultivation. Many of the plantations, where these exist, are now entirely abandoned.—Others are in part converted into cotton plantations, and in very few of them do we find the ancient works still in partial repair, and employed, to a limited extent, in the culture of rice. Yet the remains of these extensive reserves and canals, miles in length, suffice to show what can be effected, even with implements and appliances far inferior to those now in vogue, if constant and reliable labor can be procured at a moderate cost.

No doubt, when, at a future day, increased population has rendered labor accessible and cheap, as it certainly eventually must, these now almost depopulated regions, will be regarded as the garden spots of the State. It will then be clearly demon-

strated, in our very midst, that increased population does *not* produce greater scarcity, as many would have us believe, but that, on the contrary, it increases the capacity for the support of more. How often is the remark made that our State is now so old, her soils so thoroughly exhausted, that the present population is scarcely supported, and that a larger one would absolutely starve. Apart from the increased number of markets, and their more accessible distribution, (attendant upon an enlarged population and the cheapening of labor and of manufactured articles), surely every individual, whose produce exceeds his consumption, must add his share to the general credit. It is a thin population which produces a meagre aggregate production, and the whole of Europe proves to us that greater numbers induce not only greater demands, but greater supplies as well.

In these remarks on the alluvial soils, I have confined myself to the Low-Country. To this they are, of course, not restricted, but the bodies of such soil, farther in the interior, are always confined as to bulk in comparison, and they are almost always already cultivated. They produce the largest crops in their respective regions, though liability to overflows may render them somewhat uncertain in their yield. Their extraordinarily high price in the upper portion of Greenville has already been noticed in the report on that District. In my first report a very singular natural levee or embankment, enclosing some fertile bottom-lands of the Catawba, was figured and described. I must again urge the readers attention to this circumstance, since it affords a very fine illustration of that, which I have stated above, in regard to the reclamation of the rich swamp lands of the Low-Country.

In this instance the effect of such an embankment has been most beautifully and completely pointed out by nature. Immediately inside of the back-water entrance there is a moist spot, too humid for successful cultivation; but the current of the river is too rapid to permit any extensive overflow, and a fine little body of land is thus freed from almost all invasion of water. Of course it might be necessary to leave some such entrance open, even with an artificial embankment, for the purpose of permitting the egress of water, and preventing the formation of a pond during rainy weather, although this necessity would be felt more where high hills surround the enclosed land, than where the adjacent country is but little elevated above its level. Such entrance might be closed with a flood-gate, and opened when the outside water is down. But where the river current is rapid there is little to fear from inundation by back-water.

The *sandy soils* of the State may be divided into at least two distinct classes—the Low-Country sand region, and the sandy soils of the granitic rocks.—The former covers the bulk of the lower part of the State. It embraces the entire region colored yellow on the Forest Map, as well as a large portion of that colored green. As shown in the chapter explanatory of the Industrial and Forest Map, it is characterized by the long-leaved pine, and also by a great abundance of black-jacks, and by the scrub-oak. Deficient fertility is generally indicated by the latter tree, which is also known as the forked-leaved

black-jack, while greater productiveness is ascribed to the soils where the round-leaved or black-jack proper is met with. This is, however, in all probability, chiefly owing to increased moisture, which, in soils otherwise so arid, is naturally of great importance. The black-jack does not appear to be a tree which is uniformly characteristic of any particular degree of fertility. (See Report I, Chap. IV.) Indeed, it is impossible to designate particular kinds of vegetation which, in all localities, indicate a like degree of productiveness with the soils on which they are found. Climatic differences have so great an influence upon vegetation, that a plant, which, in a cooler climate, is a sure proof of a rich soil, may, in a warmer one, flourish in a very inferior variety. A very instructive illustration was shown in the hog-weed, already alluded to in this Report.

It might be inferred, with much apparent reason, that if indigenous plants flourish equally well on distinct soils in different climates, the cultivated plants ought to succeed in a similar way; that, in other words, certain native plants might serve as evidences of the adaptation of the soil to particular cultivated ones. To a certain extent this is true.—Cotton succeeds well on soils in the warmer part of the State on which it could yield scarcely anything in the cooler regions. But yet there are some matters to be considered, which prevent the rule from being admissible in all cases.

In the first place, it should be remembered that, with cultivated plants, we abstract from the soil ingredients which are not withdrawn in the ordinary vegetation of the country. A soil, therefore, which, in a state of nature, furnishes a particular indigenous plant, that elsewhere indicates a soil adapted to a certain cultivated plant, need not always yield that agricultural production with the success apparently promised. The rapidly diminished fertility, when submitted to the use of man, would impoverish the poorer soil at once, and, rendering it inapplicable to its original vegetation at an earlier day, also cause it to be of little or no avail for the particular cultivation desired, while the more durable fertility of the richer soil would ensure a prolonged success in regard to the artificial vegetation.

A second important consideration is connected with the natural rotation of crops. (See Report I.) These rotations extend over far larger regions than we might at first suppose. They change pretty suddenly over vast districts of country, but yet they are not always uniform, nor is the area of each indigenous crop equally great. To a certain extent they must, of necessity, be local; sufficiently so to prevent the presence of a peculiar plant from serving as a regular and definite indication of the character of a soil, even during its reigning cycle. At all events the subject is one still too imperfectly studied, to enable us to avail ourselves of the results with absolute confidence. Still, this is a very suggestive topic, and one from whose investigation we may hereafter anticipate the most valuable instruction.

But we have departed from the subject of our immediate consideration—the arenaceous soils of the Low-Country.

It is probable that these primarily belong to the tertiary formation. The sand is devoid of fossils, but intimately associated with the pebble formation,

which is most probably a late tertiary accumulation. This matter will be farther considered in an appended chapter on the rocks of the Low-Country. At present we have reference only to the *soils*.

The productiveness of these arenaceous soils appears, in a great degree, to depend upon their state of comminutions, the fertility increasing with their fineness of pulverulence. Thus the vast sand region, which sweeps along the southern part of Chesterfield, and covers a large portion of Kershaw and adjoining Districts, is extremely coarse of grain.—In Chesterfield especially, I observed the translucent granules of quartz to be very generally of the size of a pin-head. Not a particle of organic matter is observable, with the single exception of charred pine-leaves, the fragmentary remains of which can often be detected with ease, and have furnished a greyish tint to the otherwise purely white sand. Rubbed in the hand it soils like bad gun-powder. The traveller who has passed along the road from Cheraw to the Sugar-loaf Mountain, will know to what region I refer. Its barren and uninhabited character was already alluded to in my first Report. The only vegetation almost is found in the long-leaved pine and scrub-oak—and the grey sand hugs the roots of these trees—a picture of arid desolation. Surprise is naturally experienced at the presence of the pine even, although it succeeds on the poorest soil. Yet that tree, capable as it is of subsisting on the most meagre diet, is dwarfed and famished, and the gnarled limbs seem to writhe in suffering contortions. The animal kingdom is as poorly represented as the vegetable. No birds enliven the air; no quadrupeds find sustenance on the ground: Far and wide pine upon pine and sand upon sand stretches away in inhospitable solitude.

But this certainly belongs to the most unproductive of the entire pine-barren belt. There are other portions of it where that pine attains its stateliest size, and where its straight trunk and majestic height prove that it has reached its most perfect development. Here tar and turpentine may be produced in abundance from the trees, while the soil itself often yields satisfactory crops. Indeed, where organic matter has been infused into the more fine-grained of these soils, as is very generally the case in the proximity of water-courses, some of the most fertile cotton lands of the State are to be met with. Guano is particularly beneficial to such soils, because it can penetrate into the loose material better than with clay soils, and is, therefore, not so easily exposed to evaporation and the washing of rain.

Very similar in character to the soils of the pine-barrens are those of the itacolumite, a rock so confined in its area, that I find nothing particular to add to that already stated in the first Report. The talcose slate often furnishes an arenaceous soil, which is distinguished by its fine pulverization and extreme compactness. This also has been noticed in the first Report. We may therefore at once proceed to the arenaceous soils of the granitic rocks.

In those localities, where the different varieties of granite (granite properly so called, gneiss, syenite, &c.) give rise to sandy soils (for they often yield argillaceous ones), we find very pure white sand accumulated at the surface; but, owing to the immediate proximity of the soil-producing rock and the

level surface usually characteristic of their presence, their recuperative power is great, and their capacity of yield far beyond that which the appearance would seem to indicate. These are very frequently distinguished as "grey soils." The organic matter in them is very considerable, and they contain a good supply of the much needed potash, derived from the decomposing feldspar of the granites. They are loose soils and, plowing freely, may be worked much earlier after rainy weather than clay soils, and are less easily torn up and washed away. Post-oaks and hickories flourish on them, while the unproductive ridges are distinguished by chinapins and pig-nut-hickories. The warm, genial character of many of these soils, and their open, loose structure, induce us to class a large portion of them among the best soils of the Up-Country.

The argillaceous soils—the clay soils, in other words—embrace a very leading part of the soils of the granites and slates. The largest portion of the Up-Country is covered by them. These are the ones which gave to that division of our State its great reputation for productiveness at an early day; but the blood-red hills and torn up fields now fatally prove the reckless manner in which their cultivation was commenced.

The "red clay lands"—for by this term they are ordinarily distinguished—are characterized by a very uneven surface, in consequence of which they are much more exposed to erosion than the infinitely more level arenaceous regions. This feature causes them not only to be more rapidly deprived of their top soil, but also to be less permanently benefited by what is termed "top-dressing," especially where volatile or soluble manures are used.

Two leading causes have contributed to bring out these objectionable features with peculiar prominence—the existing fence-laws and the absence of systematic drainage. The effects of the former have already been discussed in the first Report, although probably very little of importance could there be presented by me, that had not already been exhibited to the consideration of the public, in the columns of the *Charleston Standard*, by the able pen of my esteemed friend, Mr. Spratt, whose active exertions in regard to all measures calculated to ensure the permanent prosperity of our State, and of the South generally, already many years ago, induced him to point out the defective features of laws which establish a system of individual defence, more suitably adapted to the period of mediæval aggression than to the tranquil civilization of our age and country.

As regards a complete application of the best modern systems of drainage, some of the most prominent features have already been treated in the first Report, and the results there exhibited which have ensued in countries where these have already been instituted. Connected with this practical application is, however, another matter, which merits due consideration. Greater division of landed property, or at least increased population in a desirable form, is undoubtedly one of the chief preliminary requisites for this, as indeed for all other great progressive steps in agriculture. Large bodies of land and small forces very naturally induce wasteful extravagance, and at the same time increase all those

unavoidable expenses incidental to every improvement. The soil too, thus prevented from furnishing its maximum yield, assumes a diminutive value in the eyes of the holder, and every improvement is proportionately dwarfed, from the simple fact that we all dislike to see contingent expenses exceeding the original cost.

I confidently believe that to these two causes may be primarily attributed the diminished fertility of the red clay lands of the Up-Country. There are other after-considerations, such as thorough manuring, which should be duly remembered; but it is certainly owing, in the very first place, to these causes, that those once fertile lands are now in many instances, depopulated and abandoned by their former owners; that a District, as prominent in her virgin productiveness as Fairfield, is gradually losing her original legislative representation, and that a section of the State, capable of supporting perhaps ten times the population of our entire commonwealth, is now, to a very considerable extent, thrown out as irreclaimable.

The calcareous soils are the only ones still to be considered, and the reader's attention has already so often been invited to their agricultural importance, as well as to the neglect prevailing in regard to them, that it is scarcely necessary to enlarge upon them any farther in the present Report. The calcareous soils are confined in extent, and embrace only the soils of the eruptive rocks, and of the hornblende schist in part. The distinctive terms which were given to them at an early day (black-jack lands, meadow-woods, flat-woods) prove that they then attracted much attention, and it is a curious as well as suggestive circumstance, that if you inquire into the position of the very earliest settlements in the Up-Country, where river bottoms were not selected, it will be found that the fertile soils of the porphyries and aphanites decided the choice of the pioneer. Such was the case with the Calhoun settlement, in Abbeville, and with the rich sections of Chester and York, and—certainly not to be forgotten—with the productive soil of Ninety-six. And yet, now, how little are these regions appreciated! Regions which could supply our entire State with its needed quota of horses, mules, and horned cattle, as well as export grains and hay, are now, in the majority of cases, washed, torn into gulleys, and abandoned, while we import our horses and hogs from Kentucky and Tennessee, and our hay from North Carolina and the North, or, here recently, even from Holland, where the land which we heedlessly cast overboard must be conquered by arduous toil from the very realm of the ocean.

This chapter contains much which may well serve to depress the reflective mind. Indeed, I may not escape the blame but too frequently attaching to those who venture to point out such deficiencies.—But is it really better to be silent, better to wait until the plan adopted has been pursued beyond all remedy? If suggestions are required he who suggests is not to blame; and, let it be remembered, that it is high time to consider measures, aiming at increased prosperity, when we already know that the coming census will again diminish our congressional representation.

For the Farmer and Planter.

THE ATMOSPHERE AND ITS MOISTURE.

MR. EDITOR:—The admirable* spirit with which your correspondent, "Aiken," has received the suggestions we submitted, in regard to his use of certain expressions, which convey erroneous ideas upon scientific subjects, encourages us to make a few remarks by way of further explanation.

In your January issue, after quoting from our article that part which refers to what we conceived to be his errors, he says: "This statement of "B." is correct, as far as it goes." If "Aiken" had made no remark inconsistent with this, in his further comment upon the subject, we should not have considered it necessary to refer to the matter again; for, of course, when he admits that the "statement of 'B.' is correct as far as it goes," he, at the same time admits, that his own statements are wrong, as far as 'B.' goes, which is all that was intended to be shown. But when, in his concluding remark, he adds, in reference to the same subject, "we really cannot see that there is any occasion of stricture on this mode of expression," it becomes evident, that our statement though admitted to be correct, has failed of its chief object, which was to induce a change in the popular phraseology on this subject, and thus correct the scientific errors, which are engrafted upon the popular mind by the use of incorrect language.

We are no advocate of purely scientific technicalities in a popular agricultural journal—these only discourage and confuse the common reader—but we do advocate the use of a plain, simple English, which, to the common sense of the common reader, will always suggest the truth. We fully sympathise with "Aiken" in the opinion, that it is often a difficult task to present, in a few words, scientific truth accurately, in a popular garb; but for the very reason that it is difficult to convey the truth, even when best expressed, we should always carefully avoid such phraseology as will lead the mind directly from the truth.

A little reflection will show that the language used by "Aiken," and objected to by "B.," is radically wrong, and ought to be corrected. Permit me to extract from the former articles, for convenient reference, the pith of the difficulty.

"Aiken" uses these words: "During the day, the earth, receiving more heat from the sun than is lost by radiation, becomes warmer—the surrounding

atmosphere receives a large portion of this heat, and is thus enabled to *take up more vapor*. It has its *capacity for holding* invisible vapor increased."

"B." objects, as follows: "From this quotation it would seem that "Aiken" is not aware of the fact that the deductions of science have long since discarded all faith in the atmosphere being able to "take up" vapor at all, or in its having any 'capacity for holding' it whatever," &c.

It is unnecessary to discuss the accuracy of "B.'s" position in this matter, as "Aiken" has admitted its correctness. The point, then, is this: if "B." is "*correct*" is not "Aiken" *wrong*? and if wrong, is he not grievously wrong, for they occupy diametrically opposite positions. The one says, the atmosphere *takes up vapor*; the other says *it does not take it up*. The one says the atmosphere has its *capacity for holding* vapor increased; the other says it has *no capacity for holding* it whatever—and yet, "Aiken" concludes his article by saying, "we really cannot see that there is any occasion of stricture on this mode of expression." If we should say that black is white, and white is black, would there be no occasion for stricture? And yet these terms are not more opposed to each other than those used by "Aiken" and "B.," in which "Aiken" admits that "B." is correct, but cannot see that he is himself wrong.

But to be more particular. "Aiken" says, "if we vary the phraseology of the sentence above excepted to, and make it read thus, "**** evaporation goes on more rapidly, and more vapor is taken up (or diffused) into the atmosphere,*" surely "B." will not object to it as fully and essentially correct." Certainly not, because the variation amounts to an *entire change*. The sentence objected to says, the atmosphere is "enabled to *take up more vapor,*" whilst the varied phraseology explains that it is only "*diffused into the atmosphere.*" In the first case the atmosphere is the *active* agent "enabled" to do the work—in the second case the atmosphere is entirely *passive*. Surely "Aiken" will not defend a phrase which has to be entirely explained away—altogether changed—before it will convey his meaning.

Again, in his explanation of the air's "capacity for holding vapor," he insists, that, because more or less invisible vapor will enter a space occupied by air, according to its temperature, we may truly say that the air has a capacity for vapor. Now we may reverse this argument, for it is just as true that this same space, if filled with vapor, will hold more or less air according to its temperature; and will "Aiken" say also that this *vapor has a capacity for*

*—If the first clause of the fourth paragraph of "Aiken's" article refers to the last clause of the preceding paragraph, *admirable* should be written with some qualifications. I prefer, however, the more charitable construction.

holding air, thus making the vapor hold the air, and the air hold the vapor, admitting at the same time that they occupy the space entirely independent of each other? Verily, this would be great confusion. But "Aiken" adds, "we know it is not the atmosphere itself, but the heat in the Atmosphere that produces this effect," (this increase of vapor in the air.) Now at this point we must join issue with "Aiken," on principle. It is not, strictly speaking, the "*heat in the atmosphere*" that produces this effect, but the *heat in the vapor itself*; for if there be no air present to contain heat, as in an exhausted receiver, still the vapor in a given space will be more or less, *according to its own heat*, and the presence of air will not alter the facts.

We may here say that the paraphrase by which "Aiken" would justify his objectionable language, and in which he substitutes the phrase, "diffused" into the air, for "taken up" by the air, sufficiently illustrates that he may understand the philosophy of dew himself, however incorrectly he expresses it; but the point of interest to agriculture and science is, that he, and all who instruct the public, should not only understand principles themselves, but should studiously avoid such terms as are calculated to lead the uninitiated into radical error. That such is the tendency of the language under discussion is sufficiently evident, from the fact that it is borrowed from an exploded theory, which supposes the air to soak up moisture like a sponge, or at best, to hold it in solution by a sort of chemical affinity. Language derived from such an erroneous source, and exhibiting distinct marks of its parentage, must be objectionable, as it leads the mind back to false views, and perpetuates palpable errors.

If "Aiken" doubts the tendency of such language, let him examine, as we have done, the effect it has produced in the minds of the great majority of his most intelligent neighbors, and he will find that it has riveted upon them an unqualified belief in those views of the nature of dew, which have long since been discarded by science. We once conversed with the intelligent editor of one of our leading southern agricultural journals, who seemed to be surprised that there could be any other theory of dew, than that evidently implied in the language of our best informed agricultural writers, who uniformly speak of the air "depositing moisture," "taking up moisture," "having a capacity for moisture," &c. What wonder, then, that the plain English reader should be unable to see in these words any other than the erroneous, but plain English meaning.

Such language, then, as we have shown, is un-
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true to science, for it is borrowed from an exploded theory—untrue to facts, for it leads to a false interpretation of nature—untrue to "Aiken" himself, because it does not convey his own ideas upon the subject—but, above all, untrue to the great mass of the reading public, who have a right to expect from those who would instruct them, the undisguised truth.

We appeal, therefore, to "Aiken," in common with all who minister at the altar of science, to see that her vestal fire be not dimmed by mingling error, however antiquated or popular, with the pure, effulgent light of her truth. B.

BAREFOOTED NOTES ON SOUTHERN AGRICULTURE.

BY AN OLD GRUMBLER.

NO VI.

Flush Times.—*Improved System of Agriculture.*—*Reduction of tilled land necessary.*—*High feed makes rich manure.*—*Dog Laws.*—"Wool-gathering."—*Shepherd's Dogs.*—*John Randolph and race horses in Virginia.*—*Gibbes' Factory.*—*Benefits of increased growth of wool in the South.*—*Attention to Flocks.*—*Value of Cotswold and South Down crosses.*—"Eheu ram satis."

The cotton planter will cry out: The grasses again! what does the "old grumbler" mean?—Yes, what does he mean, by thus reiterating his twaddle about grass-growing and pasturing for stock in the southern States, when cotton is ranging above 10 cents a pound at every cross-road store, and prime field hands bring from fifteen hundred to two thousand dollars a piece. Good dweller on the out-worn lands of the old States, we simply mean to aid you in bringing about a better system of agriculture, to enable you to keep your high priced negroes profitably at home—to feed them economically and without outlay of cash—to clothe them cheaply from home grown wool, and to employ them in such a way that, like a good shepherd's flocks and herds, they may repay your patriarchal care and be a blessing both to their masters and themselves in your old age. Can you do these things by planting cotton, and producing to the hand one or two bales—with a scanty corn crib and no wheat to sell—buying your dog-tailed yankee kerseys, and sending every surplus dollar to Kentucky for bacon and mules? I say you cannot. Only the alluvial fields of the south-west can stand these extravagant drains on their production.

But how is the system to be changed? Nothing easier. Clothe your barren hill-sides with grass—decrease the area of your cultivated crops—manure highly with commercial and compost manures—

and to enable you to do the latter, keep cattle, sheep and hogs—feed them well and make them pay you in rich returns of manure. It is a fixed fact that all good farming is supported by liberal manuring. Prepare these, by providing a bountiful supply of food for your stock—feed them well—house them so as to make them comfortable in winter. A great impetus has recently been given to sheep-growing in the South. Proper legal enactments for the protection of sheep, and the *improvement of dogs*, have been made, and all that is now required of the planters of the State is, to pay attention to this branch of rural employment, in order to invest it with profitable returns, and render “wool-gathering” a popular employment with the cotton pickers of the South. Now, as to this term of derision “going wool-gathering” and its origin; and, as it may be cast at these suggestions, I have only to say, that when sheep in ancient times were allowed to shed their fleeces, the shepherd’s picked it from the branches, briars, and brambles, amongst which they fed, and at best it was a precarious mode of acquiring a sufficient stock for family or “house use.” The advice of Virgil respecting this mode of treatment is equally applicable in many parts of the world at the present day:

“Is *wool* thy care? Let not thy *cattle* go,
Where bushes are, where burs and thistles grow;
Nor in too rank a pasture let ’em feed;
Then of the purest white select thy breed.”

Dryden’s Virgil, Georgics, b. III.

Sheep, in all ages, have required great watchfulness. “Eternal vigilance is the price of mutton.” This was well understood by the flock-masters of old, and the institution of shepherd’s and attendant sheep dogs, for guarding large flocks, must be practiced throughout the country, in order to ensure their safety from destruction by villainous curs.

JOHN RANDOLPH, in the height of his anti-tariff aversions, (proper in the main,) used to say “That he would any time walk a mile in order to kick a sheep.” This reminds us of the fact, that he entailed a curse upon Virginia by his advocacy of the race-horse. If she would have spent the sums squandered on race-horses—on “simple, silly sheep”—Virginia would now have been the empire State of the Union. Ovid well understood the character of the sheep, and no truer lines have ever been uttered than these:

“A patient, useful creature, born to bear,
The warm and wooly fleece, that clothed her murderer,
And daily to give down the milk she bred,
A tribute for the grass on which she fed.”

At the present time, all the sheep ask is, plenty of grass. Give flocks plenty of grazing and a free range, with hay, wheat straw, and cotton seed in

winter, and sheep-growing would soon be profitable in the South. Here we require but little shelter in winter. A free range is attainable on most plantations, where so much land is lying out and subject to waste. This State will owe much to JAMES G. GIBBES & Co., for putting the planters in the way of converting their wool into cheap stuff for negro wear. Let them be patronized, and wool enough furnished to stimulate the erection of woollen factories over the whole South. Raise the sheep, grow the wool, and eat the mutton. It is cheaper and better animal food for your slaves than greasy stearectic bacon. The change of diet would benefit them. And lastly, wherever they are grazed—wherever they are fed, they rapidly improve the soil on which they tread. Good food and care prevent most diseases of sheep. Frequent changing of pastures must be attended to strictly. They should never be allowed to run with hogs, and only with the younger neat cattle. An old cow’s horn with a careless toss, is frequently the death warrant for a valuable sheep. A breeding sow is worse after lambs than a starved wolf. The rams should not be left with the ewes after conception. They are rough and unruly, and should be yarded separately, in winter. As a finale to this rambling renewal of our series, allow us to invoke aid for the innocent sheep. Let them be cared for and protected. Use good rams to improve your flocks. The use of a pure bred ram for three generations will bring any flock of native sheep up to a high standard. If you wish to breed for ordinary wool and mutton, use the Cotswold, South Down, and Leicester. We prefer the two former breeds to all others. If for fine wool, use the Merinos and Saxons. The grades of any of these are infinitely superior to the degenerate sheep, called *natives*. In our next we will discourse specially on the grasses, and their botanical character and adaptation to our soil and climate. “*Eheu ram satis.*”

A gentleman in Stratford, says he had one piece of corn last season, which was planted, hoed and picked by “steam,” as the fellow he hired to take care of it was drunk the whole season.

VERY SENSIBLE.—It was remarked by an intelligent old farmer, “I would rather be taxed for the education of the boy, than the ignorance of mau; for the one or the other I am compelled to be.”

PRECEPT is instruction written on the sand, the tide flows over it, and the lesson is gone. Example is engraven on the rock, and the lesson is not soon lost.

There is no objection to broils in a house, so that they only emanate from the kitchen.

From the N. C. Planter.

**ON CERTAIN RESULTS WHICH ARE OBTAINED
BY THE ROTATION OF CROPS.**

To the Editor of the N. C. Planter:

There are, probably, no questions which the planters or farmers are interested in so much, as the composition of his soil and the composition of his crops. He is anxious to know what his soil is, and also, what and how much his crops take from it. He may still want to know if there is any course of husbandry, that can be followed, which will *return back what previous crops have removed*. We might answer the latter question directly; but we deem it the better plan to get at the truth by several intermediate steps, which we believe will be more convincing, as the question, or the matter really stands is one which is somewhat complicated.

The most rational and philosophical view we can take of a soil, is to regard it as a magazine of food for the vegetable kingdom; and especially for plants which are necessary to sustenance of man and animals. But this magazine is not supplied at different places alike, either in respect to the whole quantity of nutriment, or of any one particular kind of nutriment; but in order that a crop may be produced, one thing is necessary, namely, that certain kinds must always be present. This point is established by direct experiment. If, for example, *potash* is totally absent, it would be impossible to obtain a kernel of grain, either *wheat*, *corn* or *oats*. The field would be barren. The same result would follow if bone earth (phos. of lime) is absent. The results of observation and experiment, for the last half century, go to prove that there are certain bodies, called elements, which are essential to the growth of crops. Of these bodies, some are more important than others; and it is also well established, that certain ones are contained in larger quantities in certain crops than in others. For example, the crop of tops of the Irish potato, takes 7 pounds of oil of vitriol from an acre of ground, while an acre of wheat straw takes only 1.5 pounds. The tubers of one acre of Irish potatoes, carry away 13 pounds of phosphoric acid, while wheat carries away only 12 pounds. But the weight of an acre of dried potatoes is 2,828 lbs., while the weight of wheat is only 1,052 lbs.

We could go on and state other facts, in the same line of bearing, all of which would go to show or prove, that all crops take matters from the soil, some more, others less. Those which take the most, are called, by way of eminence, *exhausting crops*; and as some require but a small proportion of those matters which exhaust rapidly, it has been found economical to cause them to follow in the course of cultivation, forming thereby what is called a *rotation of crops*. Now it is no uncommon thing for persons to entertain erroneous notions with respect to the effects of rotation. A rotation is not pursued, because one crop restores what a previous one has removed. That would be a capital thing, if it could be accomplished; the farmer would get a crop, and his manure into the bargain.

To point out the state of the case, as it respects the magazine of food we have already spoken of, we may proceed to say, that this food is in two

states in the soil; it is in the first place, in a free state; and then it is, in the second place, locked up. The free nutriment, may be readily taken up by the roots of one crop, and another crop of the same kind the next year would not obtain the necessary food to make a full crop; it would be light and hardly worth harvesting. Now the locked up food is in this condition, it is in chemical union and is an insoluble body; for instance, it is potash in felspar, or potash in clay, as a silicate, which is insoluble; and as nothing is taken up by a plant but soluble matters, it is not in a state to become the food of a plant or of a crop; but as causes are in operation which are constantly decomposing these compounds which contain potash, &c., *time* only is required for freeing these enchained bodies and giving them solubility. Now a wheat crop may be called a *potash crop*; and clover a lime crop. If, then, clover is sown after wheat, time will be given for the quantity of potash which is locked up in clay to be set free, which will be wanted the year after the clover crop. For the clover crop calls for lime, and but little potash comparatively, and hence time is given for the chemical force to act and free the potash from a combination. In reality, the quantity of the free elements is small, compared with those which are locked up.

But we may illustrate the subject in another way: Supposing the clover crop, like the wheat crop, a consumer of potash, the economy of the two crops is quite different, so much so, that there is a sort of compensation in the former. The clover sends its thick roots deeply into the soil and carries on their explorations for food, where the wheat root cannot; the result is, the clover is charged with potash, which it has got in beds too remote for the wheat, and brought the potash within reach of the latter. The clover is ploughed in, and furnishes the necessary amount of potash to the wheat near the surface. In the latter case, it seems at first sight, as though the clover restored fertility by addition, on its own account, in some way or other; but the fact is, the large and extending roots of clover, compensate for the shorter, smaller and less extending ones of wheat; the clover has *merely transferred free nutriment from below to the top*.

In rotation, these two processes may both take place at the same time. The first is setting free locked up nutriment in the magazine, by the chemical changes going on. In the second an intermediate crop is resorted to whose economy varies from the former, and which perform the office of a carrier, simply, by transferring, from a great depth, food to the surface soil, where it can be found by the next crop. Exhaustion, however, does not cease to go on, if the clover hay is taken off. It is true it is less than if a crop of corn was taken off, but those slow exhausters merely postpone the day of complete exhaustion, provided fertilizers in the meantime are withheld. We may turn out a piece of land and call it an old field at rest; after twenty years of rest, when first ploughed again and crops put thereon, it seems to be restored; but it will soon be found that it is not so; as it soon relapses into its infertile condition, and is not to be awakened into life again, without guano or some kind of manure.

It is a difficult matter, however, to get farmers to believe all this. But they may look at what has taken place in Ohio. Half a century ago, it seemed to the first settlers that their soils were literally inexhaustible, and that they never would be required to resort to manures; and hence, to get out of their way the excrements of their stock, they just dumped them into the Ohio river, and they have gone down to fertilize the vast delta of the Mississippi. The effects of cultivation for years, is seen in the reduction of the quantity of wheat per acre. Formerly the average crop for the State was as high as 18 bushels per acre. Now the crop is reduced, in most of the counties in the vallies referred to, to 6 or 8 bushels to the acre.

But we propose to consider more fully the effects of cropping and of rotation, and to do this properly, it is necessary to state, that there are really two magazines of food put in store for plants:—that of the soil already spoken of and that of the air, which contains always certain elements of growth, in an aeriform state. In the earth, the most essential matters are solid, and they are never, except in very rare cases, in an aeriform state. Those of the atmospheric, get into the tissues of the plant, either by the leaves or they are dissolved in water and carried to the roots—or both methods may be in requisition.

These magazines differ in more respects than one. In the first place, the aeriform bodies, such as carbonic acid and ammonia, can never become exhausted. They always remain the same; and it is with certain crops true, that they deal with the aeriform bodies more than others. Clover and the pea, seems to require these aeriform bodies more than the cereals; and this fact is an important one, as we shall show hereafter, but we would now express the opinion that the clover and pea, are *ammonia crops*, which circumstance adapts them for rotation, or for green crops which are designed to be ploughed in as manures.

But in the next place let us consider the composition of the soil; and for this purpose we may select any soil for illustration. We will take a rich soil, one from our western prairies, furnished by Prof. Voelcker, of the Royal Agricultural College, England. Its composition is as follows:

Organic matter and water	:	:	:	:	:	7.54
Alumina	:	:	:	:	:	2.80
Oxides of iron	:	:	:	:	:	4.95
Lime	:	:	:	:	:	.44
Magnesia	:	:	:	:	:	.45
Potash	:	:	:	:	:	.65
Soda	:	:	:	:	:	trace.
Phosphoric acid	:	:	:	:	:	.08
Sulphuric acid	:	:	:	:	:	.07
Carbonic acid, traces of chlorine and loss	:	:	:	:	:	.74
Nitrogen of the Organic matter	:	:	:	:	:	0.30
Equivalent of Ammonia	:	:	:	:	:	0.36

The results of several analyses of prairie soil, would show certain slight differences in the amount of each of these elements; but for the new uncultivated soil, these differences would not materially effect the result. In casting the eye over the decimals, in the above columns, it may appear at first view, that the quantity is very small, and would be of no account. But we must recollect that an acre

of ground 10 inches thick, is not less than a thousand tons in weight; and of this, there will be rather more than two tons of nitrogen, and more than four tons of lime. If a wheat crop amounts to 36 bushels to the acre, and we add its straw, it will contain only about 52 lbs of nitrogen. But however small the decimals may appear, it is still important to know that the several elements thus represented, are absolutely essential to a crop. If one is wanting, barrenness is the result. And as these decimals represent the whole store of nutriment, both free and locked up, it is plain enough, that constant cultivation will exhaust them, unless, indeed, the soil is like the purse of Fortunatus, which admits of its pennies to run out, *ad libitum*, without its exhaustion, though it is never replenished from without. *Fortunatus* is a fictitious character, and is like his brother, *Perpetual motion*, a deceiving fellow, and a cheat, who has rifled the fortunes of many inconsiderate men.

In the next place, let us see what, and how much, a crop of clover removes from the soil. A crop of dry clover weighs 3,693 lbs., according to Bousingault. It has 7.7 per cent. of ash, and the ashes of the crop amount to 284 lbs., and these ashes contain the inorganic elements which the crop has taken from the soil.

The whole crop will then consist of—

Lime	:	:	:	:	:	90.0 lbs.
Magnesia	:	:	:	:	:	18.0 "
Potash and soda	:	:	:	:	:	77.0 "
Silex	:	:	:	:	:	0 "
Oxides of iron	:	:	:	:	:	"
Sulphuric acid	:	:	:	:	:	"
Chlorine	:	:	:	:	:	7.0 "

Each of the foregoing elements represented by its figures, show how much would be returned, if the whole crop was consumed and none returned. But supposing the crop ploughed in, as a green crop for a manure, would any thing be added to the soil which could restore what a previous crop had taken away? Certainly not; for all those elements were in the soil before. The clover has done several things, it is true; it has brought these elements to the surface; it has as it were organised them, and prepared the way for their use for a wheat, or some other crop. The clover crop, has certain powers in greater activity than wheat. It has fixed in greater quantity the volatile, or aeriform elements, as nitrogen and carbonic acid. It has a very large amount of organic matter. If we subtract the 284 lbs. from 3,693 lbs., it will show the weight of the organic matter which it has fixed; it is equal to 3,409 lbs. It has fixed in this quantity a large amount of *ammonia*, containing nitrogen, and this, it has actually added to the soil, and is furnished at hand for the wheat crop. But the organic matter is in another respect important. It readily decomposes, or is resolved into elements, and these elements are undoubtedly organic acids, which combine with the *ammonia*, *lime*, *magnesia* and *potash*. With these the organic acids, called by Berzelias, *crenic* and *apocrenic* acids, soluble salts are formed, which, in consequence of their being *organic*, are easily assimilated in the wheat plant. So that the clover or pea crop, is a preparative one, while at the same time it adds nitrogen to the soil derived from the

atmosphere, which is so essential to the composition of the gluten in wheat.

Notwithstanding, however, the addition of organic matter to the soil, in the way we have stated, it does not prevent the removal of *lime, potash* and *phosphoric acid*, &c. These are *soil elements*, and are never derived from the atmosphere, or from any other source whatever. They are fixed bodies, so that no crop can give them to the soil.

In the course of husbandry, it is interesting to see how admirably adapted fertilizers are, to fulfil the end for which they are used. Thus, a marl (green sand of New Jersey) is composed of—

Water	:	:	:	:	:	12.200
Silex	:	:	:	:	:	58.700
Protoxide of iron and alumina	:	:	:	:	:	20.600
Potash and soda	:	:	:	:	:	4.467
Carbonate of lime	:	:	:	:	:	13.910
Magnesia	:	:	:	:	:	1.213
Phosphoric acid	:	:	:	:	:	1.140
Sulphuric acid	:	:	:	:	:	0.309

Prof. Cook.

There we find the very elements which are contained in the ash of grain, straw, &c., and hence the adaptedness of the green sand to our soils as fertilizers.

So in certain artificial fertilizers, as cancerine, made from erabs. It is composed of—

Ammonia	:	:	:	:	:	25.57
Organic matter	:	:	:	:	:	29.23
Phosphate of lime	:	:	:	:	:	5.90
Sulphate of lime	:	:	:	:	:	10.32
Silex	:	:	:	:	:	1.30
Water	:	:	:	:	:	21.10

We find again the same adaptations to crops as well as soils, though in the latter substance, there is a large amount of ammonia, and hence, a larger quantity of nitrogen for a wheat crop.

In nature, there is no way by which such large doses of ammonia are supplied; neither are they required. There is enough of fertilizing matter in the soil for carrying on the natural vegetating processes. But in a state of civilization, where crops must be taken out of the hand of nature, and increased, then nature becomes unable to supply the loss arising from high cultivation and large crops. Artificial means must then be resorted to, or the heavily taxed soils will ultimately give out and become barren.

E. EMMONS.

From the American Agriculturist.

HINTS ON MANURING.

The theory of manuring is not fully understood. The most erudite scientific men are yet groping in the dark; even Liebig has had occasion to change his views and his teachings more than once within twenty years. The agricultural chemists, who were yesterday all confident in their mineral theories, are to-day hesitating, doubting, retracting. In illustration of this we cannot do better than to repeat a recent quotation from Prof. Johnson, who spent a year or two with Baron Liebig, and whose constant devotion to the science of agriculture, entitles his opinions to weight. He says:

"We are every day drifting further from what but a few years ago, was considered one of the most

fixed and beneficial principles of agricultural science; viz: that a substance is chiefly a fertilizer because it directly feeds the plant; and are learning from the numerous recent and carefully conducted experiments with manures, that in very many cases we cannot safely venture to predict what will be the influence of a given application; but find in practice the strangest and most discordant results, it being possible to show from the experiments of the farm that almost every fertilizer in use has, in some instances, proved beneficial to every cultivated crop, and in other cases has been indifferent or even detrimental."

Among the most intelligent cultivators, the greatest diversity of practice—practice founded upon observation too—still exists. Our own former opinions, once thought to be surely founded, are constantly yielding to new light, and we confess to having less and less confidence in what *now* seems to be well established theory. We must then be excused for hesitating in discussing theories where so much doubt yet exists.

Still, the best way to arrive at correct conclusions is to agitate the subject, to state theories, to collect facts, to make experiments, etc. We purpose to take up the subject of manures in a somewhat formal series of articles, introducing what appears to us to be the best theory of the action of manure, and the best practice derived both from theory and observation. This discussion will be valuable to every cultivator.

As manures are designed to enter into or stimulate the growth of plants, it will greatly assist to an understanding of the subject if we first briefly inquire in a general manner,

HOW PLANTS GROW.

When a seed of any kind is placed in the soil near the surface, with the aid of warmth, moisture and air, it germinates or sprouts. One little shoot, called a *radicle*, grows downward, and sends forth branching roots. Another shoot, called a *plumule*, starts upward towards the light. At first these shoots are nourished by the substance or meat of the seed. But afterward, the roots or leaves, or both, gather food from the air.

As fast as food is obtained and appropriated, the plant increases in size, and constantly sends out new leaves and new rootlets. The process of growth is similar in all plants—in grasses, grains, trees, etc. The spire of grass or of grain gets its food, circulates its sap, and increases in bulk, as does the apple tree or oak.

Let us now, for convenience of illustration, take the partly grown tree, and inquire where and how it gets its food, remembering that all wild and cultivated plants are nourished in a similar manner. If we carefully wash away the soil around a stalk of growing corn, or the base of a tree, we shall find the larger roots subdivided into smaller and smaller branches, until they terminate in an immense number of minute fibres (many millions on each plant), the smaller ones being too minute to be seen, without a magnifying glass. The roots draw in water or sap from the soil, and carry it to the base of the stem. This water or sap contains dissolved matter, which takes part in the nourishment of the plant.—The roots serve not only to gather sap, but they also

attach the plant to the soil, and sustain it in an upright position.

The roots converge at or near the surface of the ground, and form the *stem* or trunk. This consists essentially of long fibres closely packed together, with contiguous cells extending from the roots up to the leaves. The branches or limbs are only subdivisions of the trunk itself.

The *leaves* are in reality an expansion of the stem above, just as the roots are an expansion of its lower end. The frame-work of the leaves is made up of a series of cells packed together in two layers—an upper and lower one—and covered over with a thin layer, or *epidermis*.

It was formerly supposed that the food of the plant came from the ground. This is a mistake.—The greater part of the plant food comes from the air. [Just how much comes from the soil, and how much from the air, and whether the food is mainly carried into the plant through the leaves, or chiefly through the roots, dissolved in rain water, are points upon which scientific men differ. These are important questions, for upon them depend the theory and practice of manuring, the best kinds and forms, etc.]

Illustrations.—1st. A few feet of soil, made up chiefly of clay and sand, will bear a majestic tree, containing many cords of wood, in which are scores of bushels of charcoal. This wood and this charcoal could not have come from the few feet of clay and sand. 2d. A few pounds of grass seed on an acre of loam (sand and clay) will yield ton after ton of hay, without diminishing the soil in bulk. In fact the soil is increased somewhat. This hay cannot come from the soil. The truth is, *the great bulk of trees, of hay, of corn, and of all other plants, comes from the air.* 3d. When a log or a heap of manure rots, or when wood and coal burns up, they are not annihilated; but their little particles go off into the air, one by one, and float about unseen. These separate particles are each so small that we can neither see them depart, nor see them after they are in the air. Nor can we see them as they are again gathered by the leaves, or by rain water, until a great number are united together in the plant. But it is nevertheless true that new plants are thus made up of the very materials of which other plants were previously composed. And so the process of decay and new growth goes on in one continual round.

These general explanations will be found useful in discussing what kinds of manures to use, and how to apply them, which we shall talk about hereafter.

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From Harper's Weekly.

THE COST OF MEAT.

There is no subject of much greater importance to the farmer *now* than the price of meat; and the consumer, too, is deeply interested. It seems that there is a disproportion between the increase of animals and population; and in obedience to the invariable law of supply and demand, when the former is small and the latter large, the price is sure to increase in the same ratio for any commodity which has a market value. This seems to be true in relation to the present prices of animal food; for there is no reason to suppose that they are caused by any sudden fluctuations of trade, an unusual

short supply for any one or more reasons, short crops, increase of foreign demand, (although this has had some influence,) but to the difference between the increase of animals and that of population.

The population has been increasing thirty-five per cent. in a given time, and cattle at the rate of twenty per cent. only. We can, therefore, see no other important cause of the present high price of meat than the disproportion between the number of animals and the population. This is not a thing of to-day or yesterday, for the change has been gradual and regular for a long time. If the demand is greater than the supply, the matter is taken out of the hands of speculators and becomes subject to a higher law.

The number and increase of cattle in the United States, between the years 1840 and 1850, were as follows:

	1840.	1850.
Horses and Mules,	4,385,399	4,896,059
Neat Cattle,	14,971,586	18,378,907
Swine,	26,201,283	30,854,213
Sheep,	19,111,374	21,723,290

The increase of cattle, as shown by the above figures, has been about twenty per cent., but that of the population has been thirty-five per cent. This is true of *the whole country*.

In the old States the population has been increasing, but the number of animals has been decreasing. The table given below applies to New England, New York, New Jersey, Delaware, Maryland, and Virginia.

Domestic Animals in the Old States.

	1840.	1850.	Decrease.
Horses & Mules,	1,612,883	1,529,189	83,094
Neat Cattle,	6,172,569	6,033,841	138,728
Swine,	6,897,396	4,909,334	1,988,062
Sheep,	11,872,622	5,450,678	6,421,950

We naturally look to the New States for a supply. Let us see what the facts are. The table given below refers to Ohio, Illinois, Indiana, Missouri, Kentucky and Tennessee:

Domestic Animals in the New States.

	1840.	1850	Increase.
Horses and Mules,	1,804,092	2,116,160	312,068
Neat Cattle,	4,307,952	5,280,433	972,381
Swine,	11,726,209	13,843,041	2,116,832
Sheep,	5,197,906	8,435,658	3,237,752

The above table shows the increase between the years 1840 and 1850. But we are desirous of asking attention more especially to the *first* table, which relates to the *whole* United States, and is the basis of our views in relation to supply and demand. It may at first seem a curious fact that, in our new country and on its fertile soil, the meat-producing animals should not keep pace with the population.

Our exports of breadstuffs and animal products during the period between 1842 and 1848, inclusive, amounted to more than a million dollars; nor is there any reason to suppose that the demand will be less than it has been. When, therefore, we take into account increasing exports and the increase of population beyond that of the meat-producing animals, we can see no reason why animal food shall not have a high money value.

This is a subject well worthy the serious consideration of Western meat-growers.

A well-known writer says: "The most urgent problem which the present day has to solve is the discovery of the means of producing more bread and meat on a given surface." These words not only apply to the United States, but have a world-wide significance.

VALUE OF SCIENCE IN EXPERIMENTING.

When a farmer institutes experiments for the purpose of making a field fertile for plants which it would not before bear, or bear but poorly, the prospect of success must be small, unless he is guided by scientific principles. Thousands are trying experiments in various ways, and with varied success. It is from years of such experience that most of the methods of culture at present adapted, have been formed. These methods suffice in our district, and fail in another. The reason for the difference is, to such, incomprehensible. What an immense amount of capital and labor is lost in such experiments! What a very different and much more certain path does science lead! It ever gives to us the best security of success. The causes of failure, or the causes of the sterility of a soil for a few plants being known, the means of obviating this sterility at the least expense becomes apparent. Wheat, clover and turnips require certain constituents from the soil, and hence cannot flourish in a soil from which these are absent. Science reveals to us these necessary constituents, which, if absent in a soil, its sterility, and the cause of such sterility, is obvious. Such knowledge is what the farmer wants. It would often save to him much capital and labor, and would enable him to employ them in the most advantageous manner.

PLAIN PRINCIPLES.

All cultivated plants require alkalies, and alkaline earths; each of them may use different proportions of the one or the other. The cereals will not flourish in a soil deficient in silica in a soluble state, in addition to these other substances. Virgin soils contain vegetable matter in large proportion; and as these have been found eminently adapted to the cultivation of most plants, the organic matter contained in them has naturally been recognized as the cause of their fertility. At the same time, even in the most fertile soils, when the weight of the soluble parts of this vegetable matter is compared with that of the plant growing upon it, it is found that a small part of their substance could have been procured through its agency; but a large proportion of it is received from the atmosphere. This vegetable mold or humus, plays such an important part in the phenomena of vegetation, that physiologists have been induced to ascribe the fertility of every soil to its presence. Hence, manure supplying this ingredient is chiefly resorted to. This humus is a product of the putrefaction and decay of vegetable matter. It receives different names, according to the different external characteristics and chemical properties which it presents—*ulmin*, *humic acid*, *coal of humus*, and *humins*. These different properties or characteristics are obtained by treating soils containing humus with alkalies.

APPLICATION.

The grains and grasses will not thrive to any extent without the presence of humus. The spouting of the soil, destructive to winter grain, becomes greater and greater as the humus is exhausted. It is impossible to stock old and exhausted fields with timothy, without a generous coat of manure or of wood-soil is applied; and if stocked, it is liable to freeze out the succeeding winter. To restore humus to the soil, green manuring, or plowing in growing crops of clover, rye, etc., is one of the more economical modes, thus gathering an increase from the atmosphere. All our exhausted lands stand most in need of this ingredient—*humus*.

"OATS AND CORN AS FOOD FOR HORSES".

From the peculiar construction of the stomach and digestive organs of the horse, and from careful experiments, their food should be as much concentrated as possible; as they never remunerate, consequently they take their food into the stomach in a crude state, and the process of digestion is performed through the saliva in the mouth, and the gastric juice after it enters the stomach, where a chemical action is set up. It adds much to the economy of feed to have it ground, where grain is fed. The English cart and coach horses are fed on *bruised* oats (which is only another name for ground oats,) and this—with straw and hay cut about half an inch long, wet and well mixed with the meal before feeding—is considered the best feed, with carrots fed in moderate quantities. Oats and corn, in equal parts, ground, are considered the best feed for horses in the country. Rye, in proportion of one third, ground with oats and corn, is economical. There is no grain known which contains so much nutriment, chemically, to sustain the animal frame, as the three kinds above named. So far as economy is concerned, much depends on the relative value of the grains used; but generally oats and corn have an intrinsic value over other grain of from 20 to 25 per cent, equal weight. Corn meal and mill feed is fed to horses with good results, by keepers of stage and livery horses, with hay and straw cut fine, wet and well mixed before feeding. Carrots and other roots, fed in moderate quantities, are good, and conduce much to the health of horses that are worked every day.—Bran should never be fed to a horse except in the form of a *mash*. If given dry, it becomes impacted in the intestines and forms a stoppage to the passage of the ingesta. If a horse has been without food for a longer time than is usual, between feeding, the vital powers are exhausted, having digested the food in the stomach. If food is placed before him it is swallowed with avidity; it enters the stomach not sufficiently insalivated, or masticated, rendering it impossible for the gastric juices to act upon it, and in such cases it is with difficulty that an action can be set up in the stomach necessary to a proper digestion; hence many valuable horses are lost by *colic*, through injudicious feeding with dry feed. The London Omnibus Company keep some 6,000 horses. In order to economise feed they tried the experiment of feeding 3,000 horses on bruised oats, cut hay and straw. The other 3,000 were fed in the usual way, on neat hay and straw and whole oats, the horses doing their own grinding and cutting.

The allowance on the first system was, bruised oats 16 lbs, cut hay $7\frac{1}{2}$ lbs, cut straw $2\frac{1}{2}$ lbs. The allowance to the second was, unbruised oats 17 lbs, nutrient hay and straw 13 lbs. The bruised oats, hay and straw amounted to 26 lbs, and the unbruised oats hay and straw to 32 lbs. The horses that had the bruised oats with cut hay and straw consumed 26 lbs, per day, and the result was that they performed as much work and kept in as good condition as the horses that had 32 lbs, per day.

Here is a saving of 6 lbs., per day on the feeding of each horse receiving the ground oats and cut hay and straw. Thus, at 5 cents per day, the company saved the handsome sum of \$300 per day by using bruised oats, cut hay and straw, on the entire stock of 6,000 head.—*Am. Stock Journal*.

BEGINNINGS.—Let us see how great men make their beginnings. One of the best editors the *Westminster Review* could ever boast, and one of the most brilliant writers of the passing hour, was a cooper in Aberdeen. One of the editors of the London *Daily Journal* was a baker in Elgin. Perhaps the best reporter of the London *Times* was a weaver in Edinburgh. The editor of the *Witness* was a stone-mason. One of the ablest ministers in London was a blacksmith in Dundee, and another was a watch-maker in Banff. The late Dr. Milne, of China, was a herd-boy in Rhynie. The principal of the London Missionary Society's College at Hong Kong was a saddler in Huntley, and one of the best missionaries that ever went to India was a tailor in Keith. The leading machinist on the London and Birmingham Railway, with seven hundred pounds sterling a year was a mechanic in Glasgow. Sir James Clark, her majesty's physician, was a druggist in Banff.—Joseph Hume was a sailor first, and then a laborer at the mortar and pestle in Montrose. James Wilson, the member from Wesbury, was a plowman in Haddington, and Arthur Anderson, the member for Orkney, earned his bread by the sweat of his brow in the Ultima Thule. Benjamin Franklin was a printer; and Roger Sherman a shoemaker. These men, however, spent their leisure hours in acquiring useful knowledge.

SHEEP VS. OTHER STOCK.—The Kentucky *Farmer* thus briefly enumerates some of the advantages of keeping sheep.

They make the quickest returns for the investment in them, being ready to eat at three or four months old, and yielding a valuable fleece at one year old, and perhaps a lamb also.

Their subsistence is cheaper than that of any other domestic animals—grass and stock fodder being all they will require at any season.

They supply the family at all seasons, with the most wholesome and the most delicious meat, of the most convenient size for family use.

They present valuable products in two forms, their wool and their flesh, both of which are adapted to home consumption, and to sale, and both of which are adapted to either domestic or distant markets.

The transportation of them to market alive is cheaper than of any other live stock (not blooded) of the same value, and the same is true also of their wool, compared with other and similar agricultural products.

Sheep, here, have but one enemy, the dog, and his brother, *ignoramus legislator*; who, not having the capacity to comprehend the whole subject, and to explain it to his constituents, allows the dog to run at large unrestrained by law, and thereby this inestimable value is almost entirely lost to the State.

HINTS ON HORSE SHOEING.

Crippled and hoof-bound horses are becoming more and more common where they are used on hard roads, and the methods of shoeing adopted by many blacksmiths to prevent lameness, in the opinion of the writer, only increase the evil. Usually shoes are made with the nail-holes too near the toe. This leaves the heel unsupported, and throws the strain, in traveling and pulling, about midway between the heel and toe, which is the weakest part of the hoof. Often, when the shoes are removed, the sole of the foot is found torn loose from the hoof at the heel, leaving sores called corns. This is more common with heavy wide-footed horses, though the same style of shoeing will produce it in all.

Burning the hoof with the hot shoe, to fit it to its place, is often practiced. A number of years' experience has taught me that this should not be done. When a horse's hoof is properly trimmed, the sole is less than a quarter of an inch thick; burning will crisp and destroy the life of the seam, causing the sole and hoof to separate. This is followed by sprawling and rottenness of the hoof, lowering of the sole, turning up of the toe, and general ill-shape of the foot, and the horse becomes a clumsy cripple.

Horses likely to become hoof-bound generally have small, tough, horny hoofs, of rapid growth; but, with proper care, they may be kept free from lameness. If the shoe be not properly fastened near the heels, it causes the toe to incline forward, the sole becomes hard and dead, the heels contract and the frog is injured. Lameness must follow from the action of the coffin-joint being retarded.

To keep the foot in its natural shape the shoe should be made to fit wide at the heel: the "calk" should stand square, inclining a little outward.—The shoe should be nailed well back towards the heels, say from an inch and a quarter to two inches from the calks, thus securing it solidly from heel to toe. When the foot is in its natural shape, as strong a nail-hold can be had at the turn of the heel as anywhere about the hoof.

The clip, or upward projection from the shoe, used by many, is worse than useless. The hoof is weakened by the notch made to receive it, and is injured by the burning given to fit it in. By this treatment horses, whose feet have been worn short at the toe, have often been lamed by crisping the sole and affecting the quick, causing it to fester in a few days after shoeing. After a horse's feet have been thus maltreated, it will most generally take from six months to a year's proper care to restore them to a sound condition.

A shoe properly put on should remain from ten to fourteen weeks. If a horse is shod oftener than once in two months, there will not be sufficient growth to afford a solid hold for the nails.

M. B. KERR.

Dearborn County, Indiana.

The Farmer and Planter.

COLUMBIA, S. C., MARCH, 1860.

HINTS FOR THE MONTH.

The month of March generally finds everybody in a hurry. The anxiety not to be outdone by one's neighbor, or to get a good start, unfortunately, too often leads to the neglect of the very measures which would put you ahead.

"What is worth doing, is worth doing well," will always be found a golden maxim in plantation economy, and you may rest assured that every scheme embraced now, to dodge work, will be found a "lion in your path," the season round. Take pains then in preparing your soil, and still take pains in planting your crop.

Some of the best planters in the State, plant every seed of their cotton by making a chop with the hoe on the bed, dropping the seed into it, and covering with a drag. What would one of our fast planters say to such a movement?

This is the great month for Corn planting. We are inclined to think that no crop pays so poorly on thin land as corn. Our average corn crop is a very light affair. Can we not improve upon it? Is not the practice of running over an immense deal of ground for a few nubbins, a ruinous one, and would it not be the better policy to make a smaller area produce a larger crop? Can it be done economically? The frequent recurrence of summer droughts has made the corn crop a most uncertain one, and every body who does not luxuriate in bottom lands, has begun to feel the necessity of looking out for substitutes, or a change of culture. Subsoiling is declared by some to be a sovereign panacea; but subsoiling is not only an expensive, but a tedious operation, and not likely to be adopted by people as long as land is cheap and abundant. But we can all do a little better, doubtless, than we do—let us try. Let us determine, by experiment, whether it be best to plant corn deep between the beds, or shallow; whether more corn can be grown by crowding or by giving distance for sun and air to exert an influence; whether there is anything in variety, as being adapted to particular soils, or liable to attacks of insects; whether there is any manure better than cotton-seed for corn, at the same price.

But, do what you will, try to do it well. When your ground is ready, and not a bit too wet, wet your corn and roll it in strong lime before you plant it; if you wish to keep off the crows, drop four or five grains in the hill, and cover it carefully accor-

ding to season or soil. As to the cultivation, every man thinks he knows best, and we would prefer hearing the matter discussed by our readers.

Cotton.—Bed up your land for cotton as rapidly as your other plantation duties will allow, so as to get cotton planting over before your corn needs work. If you use Guano, mix with it its weight of Plaster or coal dust, and sprinkle it from 100 to 200 lbs per acre, in the furrow, and throw your bed upon it. Long manure may still be applied in this way. In fact, we believe all manures should be deeply covered in this climate, the "modern doctrine to the contrary notwithstanding."

Wet Days.—Select seed corn; assort your cotton seed; haul out manure; repair gear; right up fences and farm buildings, look to your plough stocks and plough irons; have an extra supply of heel-screws, false coulter, clevis, plough handles, swingle-trees, hame-strings, and plough-lines. See that you have plenty of coal on hand for the season, plough stock timber, hoe helvies, &c. These are small matters, but will pay well.

Keep the ploughs moving every hour, when the soil is dry enough, but be careful not to plough land wet, while March winds blow. Keep an eye to your fences, and keep stock out of your fields—an old sow and pigs, in a few hours, will undo the work of ten hands. The breaking up and preparing of land is heavy work; notice that your plough hands have the gear properly adjusted, the chains the same length, back-bands in the right position, hames fitted snugly, and ploughs running smoothly. It is very hard on a mule to carry the weight of 160 lbs avoirdupois, on its plough handles, and as hard upon the negro, to be shook by a jumping plough stock, as if he had a third-day ague. Notice your horses' shoulders carefully, use a wash of alum and vinegar if necessary; and if the skin is rubbed off, spirits of turpentine and varnish brushed over will often cure right away. If you can, grind your corn; if not convenient, soaking it now and then, in salt or weak ley water, will be found very grateful to the animal, and improving.

Stock.—Your cattle will require especial attention during this month; give them the benefit of all the protection you can against March winds; turn the calves on barley or clover lots; give salt and soot regularly; notice if they are infested with vermin; try white-oak bark tea, strong, snuff, ashes, Palme Christi boiled in lard; the animal will never thrive until a riddance is effected.

Sheep and young lambs should now be looked to—salt and soot regularly; a little cotton seed, or cotton seed and bran, night and morning, should be given in addition to straw, hay, or chaff. Allow them to have access to pine woods, they are very fond of the leaf, and seem to derive benefit from it.

Hogs will require especial attention; do not let them lounge about your manure piles, or sleep under the houses, or in the stables; turn them out in the pine thickets to skin pine roots occasionally; give them doses of corn soaked in ashes and copperas solution; as much corn as you can spare them, the benefit of oat, barley, or clover pasture, or, in default of all these, cotton seed thrown into a pond will be voraciously sought after, and enjoyed with good effects. At all events, his Hogship must be supplied with something adapted to his epicurean tastes.

MAPES' NITROGENIZED SUPER-PHOSPHATE.

We have received a note from Messrs. GRAVELY & PRINGLE, of Charleston, stating that the publication of our remarks upon Super-phosphates, and Prof. JOHNSON's on Mapes' Super-phosphate, had induced them "to write to Mr. MAPES, requesting information, as they had no intention of being a party to any deception." We cannot too heartily commend the spirit of those gentlemen, and only regret that there is not more of it manifested by agents.

For the gratification of Messrs. G. & P., we willingly publish the extract from Prof. MAPES' letter, although we cannot agree with them in the opinion "that it is satisfactory." It is simply an *ex parte* statement—a mere declaration of an interested individual, that his compound is a good one. The reader will not fail to notice, however, that Prof. MAPES makes no allusion to the most serious part of the charge made by Prof. JOHNSON—that the super-phosphate put up in the cans for distribution is a very superior article to that put up in the bag for sale.

As to the certificates of the foreman and others, they are not worth a groat, in a difficulty of this kind—they would indeed be arrant fools to expose their own fortress—but analysis can't lie, if honestly and scientifically conducted. If analysis proves that the cans are "salted," as the miners say, the only question then is, can Prof. JOHNSON be relied on? And this brings us to the sneering allusion of Prof. MAPES to "this Mr. JOHNSON, who is not a Chemist, or the Chemist of the State Agricultural Society of Connecticut."

In the December number of the *Working Farmer*, Prof. MAPES remarks, "one or two writers in Connecticut have seen fit to malign us in relation to Super-phosphates, &c., and these vile slanders have been copied by but one paper in the whole Union, (*Massachusetts Plowman*,) the circulation and influence of which renders any reply from us unnecessary." This is taking pretty high ground: but it is bad policy, as the old adage runs, to "halloo before you get out of the woods." Prof. JOHNSON's paper has been published and endorsed by agricultural pa-

pers in Connecticut, Massachusetts, New York, and, we may say, by almost every agricultural journal, North or South. We have never seen the first doubt expressed in regard to Prof. JOHNSON's right to the title of Professor of Chemistry, or reliability, and in all these papers (one published at the seat of Government of Connecticut) he is called *Chemist to the State Agricultural Society*. We have, moreover, seen his name announced as one of a brilliant corps of scientific gentlemen, recently chosen to lecture in Yale College, during the winter, on subjects connected with agriculture. The sneer at *Professor* comes with a bad grace from Prof. MAPES, for we have seen the charge made, over and over again, that he had no right to that title. But, independent of Prof. JOHNSON's analysis, we have heard more than one disinterested individual in South Carolina say, that he had found some specimens of Mapes' Super-phosphate good, and others worthless.

From the following slip, clipped from the New York *Country Gentleman*, (a very proper toned paper,) it will be seen that Prof. MAPES has found his December equanimity somewhat ruffled. We are glad to see our position backed by such good authority, so near the home of the Professor. We advise him "to brush around his own door first."

"We have just received, from James J. Mapes, a communication, apparently intended as a reply to the statements of Prof. S. W. Johnson, recently published in this paper, in relation to the character and value of Mapes' Super-phosphate of lime. On examining the communication, however, we do not find even an allusion in it to Prof. Johnson's prominent and leading statement—no contradiction, and still less a refutation of it. The leading statement to which we allude is, that the Mapes Super-phosphate, as sold recently in market by the bag, was, by no means, an equal article to the Mapes Super-phosphate distributed as a specimen in canister, by the pound, for the purpose of opening a market, or furnishing samples for analysis. This very grave and formidable charge is entirely passed over, from which we infer its truth is admitted. And as the communication is mostly occupied with a personal attack on Prof. Johnson, and with certificates only appropriate in an advertisement, in favor of the value of these super-phosphates, we must request to be excused from devoting so large a portion of our space to matters which are so foreign to the question in dispute.

EXTRACT

From a Letter from Professor J. J. MAPES, dated Jan'y 20th, 1860, in reply to a Letter requesting information relative to the article from Mr. JOHNSON, published in the Farmer and Planter for January, 1860.

Your favor of the 12th instant is received, and it will give me pleasure to reply to your enquiries.

You ask, "of what is the Nitrogenized Super-Phosphate made?" The improved Super-Phosphate of Lime is made of one hundred pounds of calcined bones, treated with sixty-six pounds of sulphuric

acid; thirty-six pounds of Peruvian Guano is then added, and twenty pounds of sulphate of ammonia. To change this to Nitrogenized Super-Phosphate of Lime, it is mixed with an equal weight of dried Bullocks' blood.

From the day my factory was established to the present hour, not one pound has ever been made of any other composition. I have published the affidavit of the Foreman, and all the workmen who have ever been there employed, to this fact. Probably you have seen the replies which I have written to the various attacks of this Mr. JOHNSON, whom you have mistaken for a Chemist, appointed by the State of Connecticut. It is not so, as these replies will clearly shew.

The simple truth is, that my phosphate is honestly made, and when its integrity has been attacked, I have not called upon the public to make it a mere question of veracity resting with myself, but have published the affidavits of all who knew anything of the facts.

As my printed replies will contain all the history of this Mr. JOHNSON's vituperations, and its cause, I will not trouble you with a repetition at this time, but simply say, that if you will peruse the printed documents which will be sent within a few weeks, you will be satisfied that the whole thing is but an effort, *paid for* by the proprietors of other fertilizers, who imagine that the best means to sell their material is to satirize mine.

No change has ever occurred in the quality of my Nitrogenized Super-Phosphate of Lime, and, so long as I am connected with it, no change shall occur.

I remain, gentlemen,

Yours respectfully,

(Signed)

J. J. MAPES.

HOW TOMPKINS GOT ALONG IN HARD TIMES.

"Well, Tompkins, how goes it?" asked the latter. "Such hard times as these for money, I should hardly think you could make it pay."

"Hard times makes very little difference in my trade," replied the other. "These farmers have money, for all their groaning, and do you know it is a great deal easier to persuade them to spend it foolishly than wisely? You take a good book to them, for instance, and ask them to buy it, or a good paper, and ask them to subscribe for it; why, sir, they can't afford it, they have no money; but just open a box of brass jewelry before them, set the price high, and then fall to suit their terms, and the money is always forthcoming. Only make them think they are getting it *cheap*, there's the secret.—Business is terribly dull at home this fall. I have made more money in the last ten days than I could have made in the city in three months. I keep Joe with me to polish the trinkets at night, and they open fresh and bright as a gold mine in the morning.—Some days I have taken from fifteen to twenty dollars, and sometimes more, for trash that actually was not worth three. They buy it because they can beat me

down and get it *cheap*. But to-day, on the Fair Ground, I made the best strike yet. You know how very shrewd some of these farmers think they are. I was selling off a parcel of linen handkerchiefs, and one old fellow, after examining them closely, said they were half cotton, *he* knew the tricks of these peddlers, such pests as they were, picking up all the money in the country, cheating people out of their eye teeth, &c., &c., but he would defy any of them to cheat him. I said nothing, but kept my eye on him. An hour or two after, I had the jewelry out. I was offering a box with a whole set for twenty dollars, and gradually fell to fifteen. The old man came up and examined it carefully."

"Say ten, and I'll take it," said he.

"Ten it is, then," said I, and I pocketed ten dollars for what did not cost me fifty cents! It was his own offer, and, of course, a fair bargain. *He* could not be humbugged."

Well, he served him right. How many Tompkins' have we had amongst us of late? For a year or two past, the country has been overrun by book peddlers, pinchback jewelry peddlers, spectacles men, map men, lightening-rod philosophers, patent rotary churners, tree peddlers, drummers, and song singers, and all have drawn, *easily*, fish into their own net. Go to a country church, and you will be dazzled by the old men in gold spectacles, and the young women in gimcrack jewelry. Every country post master will tell you of the dollars that pass through his office after these *gift* swindles, and much of it too, from a class of society which cannot well afford to be swindled. We know several very wise old gentlemen who won't take a dollar newspaper—"smell humbug"—who paid Tompkins ten dollars for a pair of plated spectacles, worth about two dollars. We can gather a good peck of gimcrack jewelry in a neighboring village that don't take ten copies of any South Carolina agricultural or literary journal.

We have just heard of a gentleman who, turning out to get subscribers for the *Farmer and Planter*, was surprised to find everybody, through the influence of a neighbor, subscribing for a Northern paper, published in the very hot-bed of abolitionism, because it could be had for half a dollar—it was *cheap*. "Only make them think they're getting it cheap," as the Yankee Tompkins said, and you have them. What will they find in a New York or New England paper adapted to this latitude?—Nothing; but it is half a dollar—cheap.

We heard an intelligent individual, in Columbia, (owner of negroes, land and stocks) not long ago, express surprise at being informed that an Agricultural paper, (*The Farmer and Planter*) was published in Columbia. "Never had seen anything said about it in the papers," was the reason given. Yet, we saw on the table, *Godey's*, *Graham's*, *Harper's*, and much yellow-covered literature. The *Farmer and Planter* is noticed by about six papers in South Car-

olina—about six know that such a sheet is published in Columbia. Is it a matter of surprise, then, that the people should know so little of it? All the State papers nearly, puff every number of *Harper, Godey, or Graham*, that is issued. The *Farmer and Planter* has regularly exchanged with a religious journal in this State, which has never alluded to its existence, and yet, puffs heartily such sensation papers as *Harper's Weekly*.

We do not suspect them of any intentional desire to injure us—such small craft as ours cannot certainly be in their way; but this indifference is owing to the indifference of the Press to Agricultural interests. How many papers in the State devote a column, weekly, to purely agricultural matters?

Since writing the above, we have looked over two Charleston, and one Columbia paper, and do not see a paragraph devoted to the subject of agriculture. It is all politics, conventions, hair-breath escapes, sensation stories, book puffs, lottery tickets, and patent medicine advertisements. These things pay—they are cheap, Tompkins would say. As long as people are treated to such *stimulants*, there is little hope of their relishing plain hog and hominy. What conclusion would any stranger come to, as regards the Agricultural resources, intelligence, or condition of South Carolina, by reading any paper published in Columbia or Charleston?—He would be forced to draw nearly all his material from the advertisements of land sales, negroes, and prices current.

CATTLE, AND THE TRUE PRINCIPLES OF BREEDING.

We cannot commend too highly the following extract from an address of an English farmer, upon the secret of successful breeding. One should never forget the old adage, that "like begets like." Comet as this gentleman remarks, was almost the sole fountain from which have sprung nearly all the fine animals of that breed. So it is with horses; the whole of that remarkable stock of horses (Morgans) owe their individuality and superiority to the wonderful manner the old horse impressed his peculiarities. It has been transmitted from sire to son in a wonderful degree, but, in a few generations, may run out.

There is scarcely a neighborhood in the State but its best animals may be traced to some ancestor who was remarkable for making his mark, and *vice versa*, the same may be said of the bad ones. Our greatest fault is, that we change our policy too often—we look at blood, color, or consult fancy, without having an eye to more important matters. The male should always be well bred, and as near faultless as possible, and remarkable for impressing his individuality upon his offspring.

"The American, by importing such bulls as the '4th Duke of York,' and such cows as those of the 'Duchess' tribe, places himself at once in the same position for success as England was in 1810, when Charles Collins' magnificent bull 'Comet' was almost the sole fountain from whence have sprung the hundreds of fine animals which now graze in the valleys and uplands of this beautiful country. America acts wisely in selecting well formed animals of the 'Duchess' tribe to found a race, for they possess intense vital force, and impress their own characteristics upon their offspring; as a proof of this, I may mention, that three years ago, prior to a sale, at which, among many others, some alleged animals of the 'Duchess' tribe were to be sold, I went into the field where the ticketed cows were feeding, and giving the catalogue (into which I had not looked) to a friend, I said: 'Now, let me see whether I cannot pick out for you every heifer that is alleged to be descended from the 4th Duke of Oxford, through a cow that is herself well bred;' and I did so, without a single error. I mention the fact as an illustration of how distinctly qualities are handed down from generation to generation by special individuals.

'But, gentlemen, valuable, unspeakably valuable as is a long descent; much as I esteem and love a pedigree, yet, I hold it to be the veriest folly to give high prices merely for a pedigree; to value an inferior animal merely because it has descended from fine race. Such folly will almost always end in disappointment. I have known heifers purchased at 60 guines, (\$300) which were not worth £20 (\$100) in any market in England; they were small, misshapen animals, of low quality; they had narrow chests, hollow shoulders, flat sides, and thin flanks, but wherewithal a pedigree so long, that it bothered the printer to find 'g. g. g. g's' enough and 'r. r. r. r's' enough to print the catalogue in which were detailed the great, great, great ancestors of these abortions. No lineage, however high, can compensate for such defects. One deformity in a cow of strong vital force, may be impressed upon its offspring through many generations, just as the good qualities of an unpedigreed bull—a bull without a registered maternal grandfather, 'Hubback'—have been handed down for nearly 80 years, and are seen in some of his progeny to this very hour.

"Some people are perfectly infatuated with the 'Herd Book;' they are spell-bound by its records, and seem to disregard other circumstances, if we may accept their purchases as the tests of their opinions; but this of itself will not suffice to produce a first-class herd of cows, or sheep, or pigs.—*Secure pedigree whenever you can*, but do not omit form, quality, size, and what, for want of a better term, I will call life-vigor, and by this I mean strength, activity, and a stately, lively carriage, and if to these you can join docility of temper so much the better.

"I repeat, many animals imprint their own characteristics upon their offspring through many generations, and when you have a good animal of this kind, it becomes priceless, and with care and proper management may be serviceable for many years.—We deal with artificial forms; special and even accidental characteristics have been arrested in the individual, and been stamped upon its progeny; what we term our best-formed animals are wide departures from the primitive type, and we could secure for our successors, if not to ourselves, still wid-

er deviations from existing forms, if such were deemed advisable. These facts, I think, prove how very particular we ought to be as to the qualities of the individual animals from which we rear stock.—For practical purposes it is not enough that an animal should be pure bred. It should, in itself, be symmetrical, full-sized, handsome, of good 'touch,' and vigorous, if retained for breeding purposes.—No pedigree, however high, can be an equivalent substitute for these qualities—in short, we desire *form with pedigree*; but pedigree without good form and without quality, we hold to be a mockery, a delusion and snare.

A TRULY SOUTHERN WOMAN.

Among all the kind and encouraging letters we have ever received, not one touched our heart so effectually as the following. It comes from a lady in Anderson District, and breathes so much of the true spirit of self-sacrifice and devotion to the interests of her native South, that we cannot withstand the temptation to publish it. May it be long ere she is summoned to the "court of death," and may her example be followed by all the fair daughters of our heaven blessed South, not only in sustaining southern periodicals, but in sustaining every interest that will advance the independence and prosperity of every industrial pursuit established south of Mason & Dixon's line. Let the men support the northern journals if they choose, if we can get the influence and patronage of such southern ladies, the *Farmer and Planter* will be as firmly established, as the Tomb of Washington is now preserved and made sacred.

If any influence could induce us to sacrifice more time and money, this letter of Mrs. P.'s would nerve us to the task.—PUBLISHER.

ANDERSON C. H., Feb. 11.

MR. EDITOR:—In looking over the February No. of the *Farmer and Planter*, received yesterday evening, we are truly sorry to learn that this year will probably number the days of this valuable agricultural periodical. Enclosed you will find a \$1.00 bill, which I had laid away to send for a picture called "Peale's Court of Death," but when I see citizens of South Carolina dropping one of the best papers of the kind ever published north or south, and taking the *Genesee Farmer* in its stead, I have come to the conclusion to do without the picture, and you shall have the dollar. Use this mite as may best promote the interest of your paper. If you prefer a new subscriber, send it to Dr. J. M. S——, White Hall, Mecklenburg County, N. C., or if he has become a subscriber, (he was not last year,) send it to Mrs. C. R——, Butlersville. With best wishes for your success, in your laudable enterprise, I subscribe myself, very respectfully and truly,

Yours,
M. J. P——.

ROTATION OF CROPS.

Our readers will find a very sensible article upon this subject, from the pen of Prof. EMMONS, clipped from the *North Carolina Planter*. It is a subject full of interest to every cultivator of the soil in the old States. Virginia is, perhaps, the only planting State, which has given it any thing like a systematic trial. Manuring, every body admits to be an expensive, and tedious operation—sometimes a hazardous one. Rest never does harm, and if rotation does good—maybe, between the three, we may strike out some method of bettering our condition.

Cotton grows well upon land rested—so do peas, and every thing grows well after cotton or peas. We have a good deal to find out before we make much progress—but it can only be done by trying experiments—a very difficult thing to persuade people to do, while rich land can be bought in the southwest at from \$5 to \$10 per acre. Young America, like old leather-stocking, wants, and will have, elbow room.

By the way, we congratulate our cotemporary upon its improved appearance, and its determination not to give up the ship. We offer a cordial greeting to the new editor, Mr. JORDON, and hope he may be able to rouse Old Rip from her slumbers. North Carolina contains not a few good planters, and a large area adapted to all the staples of the South, as well as mountain lands adapted to the grasses, stock-breeding, fruits and manufactures. Can't the Old North State, as she loves to be called, support one good agricultural journal—having no greater ambition than to develop her resources and add to the prosperity and happiness of her people?

"YOU MAY TAKE MY HAT."—SOUTH CAROLINA MANUFACTURES.

It is a somewhat gratifying fact to see our people a little roused upon the subject of southern independence, and evincing, if nothing more, a sort of newspaper enthusiasm about patronizing southern manufactures and southern merchants. We have not much faith, it is true, in such talk—it generally fritters itself away in the newspapers without any practical good resulting from it. In truth, the newspapers only turn it to political account—they care for nothing now, dream of nothing now, think of nothing now, but what will affect the next Presidential nomination. The agricultural and manufacturing prosperity of South Carolina, just now is not a feather in the scale weighed against the Charleston Convention, and its consequences. Oh, how odorous are the flesh-pots of Egypt? But we took up our pen mainly to say, that Mr. WOOLEY, of Graniteville—who has carried off the Premium at every Fair of the State Agricultural Society, makes a far better and pleasanter covering for the head than any

manufacturer north of Mason & Dixon's. We pen this note, enjoying the luxury of one of his soft hats, which, *ab initio*, fits you, and feels to you, like you had set for the artist. If you don't believe it, call at REMSEN'S, a few doors above the Congarce, and he will convince you that WOOLEY makes the completest planter's hat in market.

MAPS OF MR. LIEBER.

Our readers will find in the present number a map of the "Forest Growth of South Carolina," and an "Industrial Map of South Carolina," from the pen of our accomplished and indefatigable State Geologist, Mr. LIEBER.

These maps exhibit some very interesting features, and will be found well worth one's careful examination. At a glance you can form a correct idea of the topographical character of the State. The mountain growth, the up-country growth, long-leaf pine, swamp and coast growth, stand out before you unmistakably defining the peculiar characteristics of their habitat.

The Industrial Map is still more interesting and useful. Upon it you can see all the mines, and ore deposits. You can trace out all the Geological boundaries, which define the limits of the various agricultural productions of the State, the various water-courses, Railroads, &c. If the manufacturing establishments in the State had been dotted down, this map would have been a perfect *Vade Mecum* for everybody.

OUR EXCHANGES.

It is gratifying to notice the evidence of prosperity so marked in many of our agricultural exchanges.

The *Southern Rural Gentleman*, published at Grenada, Miss., has come out in a new suit, tastefully embellished, and full of good things. The *Southern Homestead*, published at Nashville, Tenn., has been making some very creditable alterations too, and comes out bright and hopeful as to the future.—The *Valley Farmer*, published at St. Louis, Mo., comes out in a very attractive rural suit, and there are few farmers generally so fortunate in their display of good things, as this same farmer of the valley. "May his shadow never grow less!" But we have not time or space to give all our worthy confreres a place in the picture. They have been a little tardy in coming into our sanctum, but we offer them most heartily the blessings of the New Year.

SUGAR CAKES.—One and one-half cups sugar; 1 egg; $\frac{1}{2}$ cup butter; $\frac{1}{2}$ cup sweet milk; 2 tea-spoons cream tartar; 1 do. soda, and flour enough to roll thin. Bake on tins.

GRASS LAWNS.—Top dress as soon as possible with decayed stable manure; if this cannot be had, then wood's mould, or rich garden earth.

For the Farmer and Planter.

SHEEP HUSBANDRY.

It is now generally admitted that a great portion of the up-lands in this State, as well as many others, is decreased in fertility to the very lowest point of deterioration, which must naturally bring to the consideration of the occupier the questions of removing or improving. If the former should be his choice, he has nothing to do but set out for his new home, and more than probable, pursue his former course of devastation, by being as expeditious as possible in converting his new land to the same state of poverty as his late deserted home. But few I presume would take this course, if they could be convinced of the possibility of renewing the productiveness of these exhausted lands to their original fruitfulness, by a moderate outlay of capital. It is very justly contended that the expense of renovating these lands would exceed the outlay of building and clearing new, which is probable it would, if it is to be done by artificial manures; but I believe there is a much cheaper method—which is sheep husbandry. Such, if properly carried on, is the most rapid and economical plan man can devise. If he will have but little patience and perseverance, he will shortly see his crops doubled as well as his flock. This cannot be done by such attention as is at present generally devoted to sheep. Turning them at large in the woods does not enrich the worn-out lands. Woods-pastures, partially cleared and sown with grasses, would most certainly be necessary as a resort, in case of scarcity of food on the cultivated parts, in addition to the great assistance derived by enriching land for other crops. In advocating any particular branch of business, the public reasonably look to that individual for some slight comment on the advantages to be derived from it: and as sheep husbandry is most decidedly in its infancy in this country, it is more than probable many will require such information, as to the benefit to be obtained, and the best mode of proceeding. To such I would say, let your first object be a bountiful supply of vegetable food, such as turnips, mustard, rape or kale, and any kind of grass best suited to the locality. Of the above, the first mentioned is the most expensive, still, nevertheless, almost an unavoidable necessity. Mustard and rape or kale is but little expense, both as regards seed and its culture, requiring but a small amount of manure, and little work after it is sown, making good food for spring, summer and autumn. Grasses are the less costly—when once obtained they form almost an everlasting pasture, with but little outlay occasionally. People generally, in taking into consideration the subject of sheep farming, too lightly rate one of the most valuable items, their manure, which, from two hundred sheep, at a very moderate

calculation, would manure fifty acres of land yearly, as highly as two hundred pounds of guano per acre, which bring their excrements alone equal to ten thousand pounds of guano—and sheep must be rather mean and badly cared for not to yield four pounds of washed wool per head yearly—so that those neglected animals, thoroughly attended to, would be a great acquisition to any plantation. In them you have an equivalent to a guano deposit—the raw material for the most necessary of all clothing, and the most wholesome of animal food. The first thing after a person has determined to embark in this most useful branch of husbandry, is the breed of sheep to commence with. As to his ewes, he would be almost obliged to take the common sheep of the country, as the improved breeds are very scarce; but by all means select the best of bucks. I am at present a strong advocate of the Cotswold breed, for they make a greater weight of wool and mutton than any other. As the Southern States are now exerting themselves to become independent of the North, I think the Cotswold breed of sheep would greatly assist them, for I am informed their wool is best suited to mix with cotton, and I know it makes one of the best of that useful article, the blanket. In conclusion, Mr. Editor, I would like to see the opinion of more able men than myself, advocating this highly necessary branch of farming; and since the Legislature has taken a step in the right direction, for the better protection of sheep, let the farmers get some for them to protect.

AN OVERSEER.

For the Farmer and Planter.

DOGS vs. SHEEP.

[By the returns of the Assessors in Ohio to the State Auditor, in August, 1859, we ascertain that the number of sheep killed and injured by the growler and barker family, amounts to something like 97,000 head, to the value of \$147,000, in round numbers.] Now, this is paying pretty dearly for the luxury of keeping "Tray, Blanche, and Sweetheart."

How many hungry people would these 97,000 sheep have fed bountifully? How many suffering bodies would their fleece have comfortably clad?—How many springs of industry would have been set in motion, by converting their fleece into fabrics?—Are these things not worth thinking of?

There is no domestic animal, as well adapted to the wants and condition of an old, worn-out country, as the sheep, and but for the dogs, thousands could and would be profitably raised in South Carolina. "Sheep have golden feet," runs an old Spanish proverb. They can be made to yield a very large amount of excellent manure; they can be kept at very little expense, and require, in this climate, less care than any other domestic animal.—How many thousands of acres of broomsedge old

fields have we in South Carolina, upon which sheep could keep fat nearly the year round? How many thousands of acres of mountain range, equal to any in the world, to produce wool and mutton—with all the advantages now of Railroad facilities, and ready market at home. [But the dogs—what will you do with them?] Why, Mr. Editor, what are you talking about? [didn't our last Legislature pass a dog law? Yes, a cunningly devised fable, which is neither fish, flesh, nor fowl.]

By section 1st, The party injured can receive double the value of the sheep killed; but there is always "catching before hanging." If you knew the dog that killed your sheep, it would be easy enough to dispose of him at once, but while you are at law about the damage, he may eat up the rest of the flock. And if you should go into court, nine juries out of ten (or magistrates) would value a sheep at two or three dollars, and could not be made to understand why a Merino, South Down, or Cotswold should be worth more than a deer-shanked, sharp-nosed, hairy-wooled native.

Section 3d professes to impose a tax upon every dog kept by a slave, to be paid by the owner of the slave. Now, if the owner of the slave does not wish him to keep a dog, he will not; if he does, he will claim the dog as his own, as he is, *ipso facto*, if belonging to his negro.

We will lay a wager that not a dollar is ever collected under that section. But the policy is wrong. It is not the negro's dog that kills sheep. We will lay a wager that there is not one case in a hundred where the sin can be laid at his door. Cuffie will always divide his last crumb with Bull, Tiger, or Pompey; his dog sticketh closer to him than a brother, and never leaves his cabin or his track, save when 'possum or rabbit hunting.

Section 4th. Taxing free negro dogs may do very well, for free negroes rarely have enough to eat themselves, and are a roaming, thieving, thriftless set generally. You can tell a free-negro dog anywhere.

But the dogs that really do the mischief are the dogs of gentlemen of elegant liesure, who are too lazy to hunt with them, and of the democratic loafer, who don't like to work, but glories in the luxury of a house full of children and a dozen dogs.

Honest, working people, who earn their bread, don't keep worthless dogs about them; if they keep a dog, they feed him, and train him up properly; but your roaming, worthless vagabond, will keep a score, and expect them to take care of themselves. But these fellows have votes, my dear sir; it will never do to tax their dogs. Gemini! They would kick up such a dust about our ears, that we would never find our way into the new State House. Eh! There's the rub! ————— Then, what is to be done?

NOUS VERRONS.

For the Farmer and Planter.

HUMBUGS.

MR. EDITOR:—As a planter, allow me to thank you for the stand you have taken in behalf of the agricultural interest—to protect it against impositions. I am satisfied, sir, from the experience of some of my friends, that a great many impositions, in the way of chemical fertilizers, are daily palmed off upon the people, by means of the puffs paid for in the newspapers, and certificates given, but too often by interested parties. I stepped into the counting room of one of our country merchants a few days ago, and found advertised, in a big hand-bill, “Mapes’ Super-phosphate of Lime”—the merchant’s name at the bottom put down as agent. Do you take the *Farmer and Planter*? I asked. “No, sir.” Well, if you had read the January number, you would not have stuck up that hand-bill on your wall. “Ah, indeed! well, I saw it puffed a good deal in the papers, with certificates of its being tried in South Carolina, and I thought I would try a ton or so for an experiment.” Do you know that some of those certificates are signed by agents of Mapes?—“No.”

These hand-bills are all over the country, and people are humbugged by seeing the puffs in the newspapers, editorial puffs, communication puffs, and all that, when, if they knew how such things were manufactured, and got into the papers and worked round and round, the same half-dozen certificates and puffs running from Maine to Texas, they would not attach much importance to them. Look into what paper you will, and you will find the same ubiquitous certifiers. I picked up a *New York Day Book*, a few weeks ago, and there was an article telling what wonders had been wrought in South Carolina, by the use of Nitrogenized Super-phosphate on Grass.—How it made the cotton boll better, lint better, staple better, and escape from rust—the same old hand-bill certificates, from men I never heard of, although born and brought up in the State.

An agent, at the last Fair, gave me a “set-to” on Mapes’ Super-phosphate, and when we parted, handed me a *Working Farmer*—Mapes’ paper. Well, I had no time to read it then, so I took it home: here was the same old story again—Nitrogenized Super-phosphate was the only thing we wanted to bring us the golden fleece.

Prof. Mapes is a most plausible writer, and carries such a degree of earnestness and apparent candor about him, that I found myself fast going overboard, when my eye fell upon the following notice, and I began to think, “hands off!” This man’s manures may be as spurious as his principles seem to be, and I cooled down to 32° in a trice, not feeling altogether satisfied with the “new arrangement” for circulating the abolition clap-traps and heresies of the two famous political persons of New York:

NEW ARRANGEMENT.

BANNER OF LIGHT AND WORKING FARMER FOR TWO DOLLARS TWENTY-FIVE CENTS.

Our publisher has made an arrangement with the

publisher of the *Banner of Light*, by which he will be enabled to furnish both papers to new subscribers, at the low price of *Two Dollars Twenty-five Cents*—the subscription price, when taken separately, being Three Dollars.

The *Banner of Light* contains each week, verbatim reports of sermons and lectures of the Rev. Henry Ward Beecher, the Rev. E. H. Chapin, and of other eminent divines, also stories of sterling merit, general information, etc., and its size is greater than that of the *New York Ledger*, making a most desirable family paper. See advertisement in this paper. —[Ed. RASP.]

For the Farmer and Planter.

EXPERIMENTS WITH COMMERCIAL MANURES.

MR. EDITOR:—As all the cotton growing region seems likely to run mad on the subject of commercial manures, I think it behooves every planter to publish his experiments in the use of them, especially if thereby he can prevent his brother planter from buying their experience as dearly as I did mine.—For this purpose I send a report of an experiment made by me last year, which you can publish, if you think proper.

The land selected for the experiment was a red clay ridge, and is part of a twenty-five acre lot, which had been manured the year previous with lot manure, and had produced a fraction over eight hundred pounds to the acre. I selected four acres of the highest and poorest part of the ridge, and manured one with 160lbs of Reese’s manipulated guano; one with 160lbs of Kettlewell’s manipulated guano; one with 160lbs of Kettlewell’s Renovator, and left one unmanured. The manure on each acre was strewed in the furrow—the land was bedded with a two-horse plow, and dressed with the hoe in March. It was planted in Boyd’s prolific cotton in April—came up a perfect stand—was cultivated well—picked and weighed separately and accurately, so that there might be no mistake or guessing in the experiment. The result was as follows:

PRODUCTION OF COTTON PER ACRE.

No. 1. Manured with 160lbs Reese’s Manipulated Guano, produced	- - -	1138lbs.
No. 2. Manured with 160lbs Kettlewell’s Manipulated Guano, produced	- - -	1021
No. 3. Manured with 160lbs Kettlewell’s Renovator, produced	- - -	996
No. 4. Not manured	- - -	1012

COST OF MANURE PER ACRE.

No. 1. 160lbs Reese’s Manipulated Guano, at \$57 per ton,	- - - - -	\$4.56
No. 2. 160lbs Kettlewell’s Manipulated Guano, at \$57 per ton,	- - - - -	4.56
No. 3. 160lbs Kettlewell’s Renovator, at \$37 per ton,	- - - - -	2.96

INCREASED PRODUCTION PER ACRE.

No. 1. 126lbs Seed Cotton, at 3 cents,	- - - - -	\$3.78
“ 2. 91lbs “ “ “ “	- - - - -	27
“ 3.	- - - - -	

LOSS PER ACRE.

No. 1.	- - - - -	\$.78
“ 2.	- - - - -	4.29
“ 3.	- - - - -	2.96

I propose to continue the experiment further, by planting each acre in corn, without any additional manure, and will send the result to you.

Yours, &c.,

PINE TOP.

Horticultural and Pomological.

WILLIAM SUMMER, EDITOR.

MONTHLY TALK WITH OUR READERS.

The almost continual wet weather of January and February prevented the preparation for sowing and planting, and, with the fine genial days that come with the opening of spring, will cause much work to be done. Gardening, in the upper districts, properly commences this month; the cold and blustering days of windy March must not prevent your making every necessary preparation that has not previously been attended to. See at the outset that you have the necessary implements—good, light, steel hoes, rakes, and forks; the four-pronged garden fork is one of the most useful implements, and a hand not able to do good work with a spade, will be able to fork up a bed and put it in admirable condition for any crop. Usually, at this season, a sort of spring gardening fever attacks most persons, but remember, to have good vegetables, fine flowers, the excitement must be regular, and well kept up. Do not depend upon borrowing seeds and implements of your more careful provident neighbors, but procure them at the seed stores, at the hardware houses, where good implements can be had. Our worthy and respected townsmen, AGNEW & FISHER, can supply you with good forks, rakes, and hoes; and seeds can be had of any of the seedsmen. Study the wants of your garden, and supply everything, each month, as may be needed; and each month finds its regular work to be done, and if arrangements are made before-hand, it will be a pleasure to attend to it. Continue to sow in the vegetable garden such crops as are required for the season.—Melons, Cucumbers, and Squashes, may be planted, and protected towards the close of the month.—Okra must be put in for early use the last of the month; it is one of the best vegetables, and a plentiful supply should be provided for early use.—Adams' Extra Early is the best variety, and far superior to the varieties of sugar corn, and other varieties of early mutton corn. The richer and warmer the soil in which it is grown, the better the product. Tomatoes, Egg-Plants, Peppers, that have been started in-doors, may be transplanted, with a little protection. The Tomato does not require freshly enriched soils, but the reverse is necessary for the Egg Plant. Sow Cabbages, Carrots, Beets, Parsnips, Salsify, Radish, Lettuce, &c.

The Fruit Garden and Orchard requires attention. Look to your trees, and if any bark lice or other insects, loose no time in applying a coat of soft soap,

in which a very little Guano should be mixed. Apply about the limbs and forks of branches, and wherever the *coccus* appears, and when it is washed off by the rains, the bark will be left clean and healthy. All fruit trees must be trained in our climate. The protection of the stem and main branches, and the shading of the soils in which the roots find their support, from the powerful rays of the sun, are absolutely necessary to the production of good fruit. This is to be effected only by training the trees with low heads, and encouraging a thrifty growth. Fruit trees may still be planted, and will succeed fully as well on cold or wet soils, than if set earlier. In the Nurseries, knowing that persons often neglect this important matter until they are reminded by the approach of spring—trees may be obtained, which have been taken up and laid by the heels, for those who have postponed planting until now. If you have neglected setting out Strawberries, attend to it at once, as this month is equally as good, if not more certain, to a good stand of plants than any other, and next season you may expect to enjoy this delicious fruit to perfection.—One or two kinds are sufficient for a supply; and, in the whole range of Nursery Catalogues, a selection of eight or ten choice varieties could be made to include everything desirable, either for the amateur, or market gardener. Don't be bitten by such announcements as Peabody made, and humbugged the people through the Patent Office. Longworth, Albany, Hovey, McAvoy's Superior, and Walker, are the best varieties we have tested.

By the 20th of the month the caterpillars will begin to build their nests; the webs will be seen, very small at first, in the forks of the trees and branches. Provide yourself with a light pole, or fishing-rod, to which fasten a piece of sponge; get a few pounds of crude potash, and prepare in a convenient bucket a solution, one pound to a gallon of water. In the early morning the caterpillars are all in the nest. Go through the orchard with your rod and sponge, and wherever you see any sign of a nest, dip the sponge in the solution and swab the nest, rubbing it around the fork of the branches, and you, with a very little attention, rid your orchard of these destructive pests. The alkaline solution is not only destructive to the caterpillars, but will destroy the eggs. As there are several broods which follow each other in quick succession, it will require a few times going over to destroy them entirely.

We had intended to give some directions as to sowing the seeds of annuals, as, in our capacity as a Nurseryman, we have many requests for information from our lady friends, but we give Thorburn's directions for the culture and treatment of

flower seeds, which is the best paper we have seen on the subject—have made a few slight alterations, to suit our climate. Who is not charmed with the Pansy or Hearts-Ease—the lovely China and German Asters, which add many a charm to the flower garden, and give the ladies and young folks great pleasure and gratification? Our seeds-men, we see, have all the varieties that are desirable for sale.

PRACTICAL DIRECTIONS FOR THE CULTURE AND TREATMENT OF FLOWER SEEDS.

It is pleasing to observe that the taste for the cultivation of flowers is steadily increasing. Almost every one can find leisure to put a few seeds into the ground and afterwards to watch the young plant pushing through the earth; to observe the bright, green stem waxing into strength, and throwing out its tender foliage; to see the delicate and wonderful bud forming and swelling, which is to be the reward of all your assiduity. Any one who has done this for a season, will find the pursuit to possess a species of fascination, which will yield the purest enjoyment. When farther initiated, and become familiar with the beautiful mysteries, it is delightful to steal into the garden, day after day, and trace the gradually expanding bud developing the unknown glory of a new variety. But the whole process of flower cultivation is so innocent, so congenial to health, and leads the mind so naturally to devout contemplation, that we conceive it is unnecessary to urge anything farther in its favor.

Previous to forming a flower garden, the ground should be properly prepared, by being well broken and slightly manured. In the country it should be protected from cold winds, by close fences, or plantations of shrubs. Generally speaking, a flower garden should not be upon a large scale. In small gardens, where there is not space for picturesque delineations, neatness should be the prevailing characteristic. A variety of forms may be indulged in, provided the figures are graceful and neat, and not complicated. An oval is a form that generally pleases, on account of the continuity of its outlines; next, if extensive, a circle; but hearts, diamonds, or triangles, seldom please. A simple parallelogram, divided into beds running lengthwise, or the large segment of an oval, with beds running parallel to its outer margin, will always please.

It is necessary to have suitable implements ready, so that the work may be performed well, and at the proper season; such as a spade, rake, hoe, trowel, line, and pruning knife. Labels may be made readily of shingles, by splitting them in strips of about an inch wide, and five or six inches long, and sharpening them at one end. Paint them with white lead made thin, and mark them with a black lead pencil before the paint gets dry; inscriptions written in this way, will be distinguishable as long as the label lasts.

All kinds of *Hardy Annual* Flower Seeds may be sown in the month of April; the beds should be levelled and the seeds sown either in small patches, each kind by itself, or in drills from an eighth to a half an inch deep. In about a month, more or less, many of them will be fit to transplant. Take advantage of cloudy and rainy weather; move the plants carefully with a trowel, the smaller kind set

in front, the larger in the rear; but if the weather be dry and the sky cloudless, give a little water, and cover them for a few days.

The best method to obtain an early bloom of the *Tender Annuals*, and to insure strength to the plants, is to sow the seed in pots early in March, placing them in a warm green-house window, or plunging them into a moderate hot-bed, carefully protecting them from the cold, shading them from the mid-day sun, and watering them with a finely pierced watering can. The seed should be sown in very light, sandy compost, and the pots well drained by placing broken earthenware and rough sods in the bottom; the finer seeds must not be planted more than an eighth of an inch deep, and the soil must be pressed down closely over them. Water frequently, particularly if the house or frame is very warm. As soon as the seed leaf is fully developed, transplant into small pots, three or four in each, and when they have acquired sufficient strength, transplant into the flower beds, not, however, before the last of April.

Biennials and *Perennials* may be sown at the same time with the *Annuals* of the same degree of hardiness, and treated similarly, except such of the *Hardy* kinds as do not blossom the first year; these last may be thinned out or removed from the seed beds as soon as they are well rooted, and planted, either into different parts of the garden or into a nursery bed, in rows, a foot or more apart, keep them clear of weeds by hoeing and stirring the earth occasionally, which will greatly promote their growth, and prepare them for transplanting into the permanent beds, either in autumn or the following spring. *Biennials* are raised principally from seed sown every year. Some *Perennials* and *Biennials* may be sown in September, or as soon as ripe; and if the plants get strong before the setting in of winter, most of them will flower the next summer. In transplanting, take care to preserve some earth to their roots, and tie the tall-growing kinds to neat poles or rods. Remove decayed plants, and replace them with vigorous ones from the nursery bed. Keep all the beds free from weeds, and the walks clean and neat.

Green-House varieties should be sown as directed for *Tender Annuals*, in pots, pits, or boxes, be kept in the house, carefully watched, slightly watered occasionally, and sheltered from the hot sun, till strong enough to transplant; most of these varieties may be sown at any season of the year.

The smaller seeds of *Green-House* plants are sometimes difficult to germinate, unless great care is taken in the mode of sowing. Thence the supposition is produced that the seed itself is not good; whereas the fault is not in the seed, but in the treatment.—Fine seeds of this description should be sown in leaf mould or peat earth, with some silver sand added to it, which should be pressed firmly down in the seed-pan or pot, and made perfectly level at the top, so that the mould may not afterwards sink materially with watering, and thereby carry down the seed with it to a greater depth than that at which it is sown. Sow the seed very thin, and cover *very slightly* with a little of the compost, or with some of the silver sand. By this method the difficulty of succeeding with fine seeds will be removed. As soon as the young plants have two leaves, they should be transplanted into similar compost in another pot. To do this, do not *pull* them up out of the seed-pan, but *lift* them with the point of a knife,

passed under their roots. By that means the young minute roots are taken up without breaking. After transplanting they should be kept in a shady part of the Green House for a few days, until they are established in the new soil.

There are many minute plants, from the finer seeds, killed by drenching them with water whilst very young. One way to avoid this, is to give the water by dipping a clothes brush in water, (shake off the greatest part of the water from the brush) and then holding the brush over the seed pan, draw the hand over the bristles several times, which will cause the water to be thrown on the young plants almost like dew. Whilst in the first stage of their existence, plants require moisture in a minute quantity, often repeated, and not in such large quantities as to saturate the soil in which they are growing.

Seeds of Climbing and Twining Plants are frequently left too long without support; the consequence of which is, that the plants remain weak, and never afterwards become strong and healthy.—Sweet Peas, Convolvulus, and all similar seeds, should have their supports given them as soon as they are two inches high, in order that they may not become stunted in their early growth. To have a fine bloom this is of considerable importance.

To avoid failure, Flower Seeds should not be sown in the open borders too early; never in this vicinity before May; more disappointment results from too early sowing than from any other cause.

The following and some others being too apt to droop and die if transplanted, should be sown in the borders in the spot where they intend to bloom, viz:

<i>Argemone,</i>	<i>Lupins of sorts,</i>
<i>Candytuft,</i>	<i>Malope,</i>
<i>Catchfly,</i>	<i>Animated Oats,</i>
<i>Dwarf Convolvulus,</i>	<i>Poppies of sorts,</i>
<i>Evening Primrose,</i>	<i>Sweet Basil,</i>
<i>Adonis Flower,</i>	<i>Venus Looking Glass,</i>
<i>Gypsophila,</i>	<i>&c. &c.,</i>

but with these exceptions, most other varieties flower earlier and more strongly by being sown in frames or pots and transplanted; this applies particularly to the finer sorts of *Paris Balsams*, *German Zinnias* and *Asters*. Where, however, it is inconvenient to adopt this latter mode the following is recommended:

Take a dollar package of twenty-five varieties, and number the bags from one to twenty-five; then sow a circle from each bag in the order in which they are numbered, and insert a short stick in the centre of each circle as a mark. By this method the twenty-five varieties are distributed along the borders in succession, and as each bag will be sufficient for three circles, sixty circles, or three assortments of twenty-five varieties, may be sown in three different aspects of the garden, which will not only give the various flowers the best possible chance with regard to exposure, but show the varieties to the greatest possible advantage. By preserving the bags, the mere novice by referring to the name and number on each, will become acquainted with the different varieties, from the order in which they stand in his garden. This system may be practised to advantage either on a large or small scale, and the young plants be allowed to mature and blossom in groups or bunches as they stand, or may be transplanted wholly or in part as the taste of the cultivator may direct, or the less well filled neighboring border requires.

Some species of Dwarf Annuals, such as *Sweet Alyssum*, *Candytuft*, *Clarkia Pulchella*, *Mignonette*, *Pimpernel*, and such others as grow not over a foot in height, may be cultivated in small beds, either separate or two or three kinds mixed together. *Clarkia Pulchella* suits very well with *Mignonette*, as it will thrive in moderately poor soil, which is the best adapted for that plant when fragrance is an object.

The best way to manage the mixed species, is to level a narrow border of rather poor soil, and sow it all over with *Mignonette*, then with *Clarkia Pulchella*; when the plants are up, both kinds should be thinned out equally, so as to leave the plants from one to two inches apart all over the bed; these when they come into blossom, will form a rich mass, and have a very pretty effect, the bushiness of the *Mignonette* hiding the naked stalks of the *Clarkia*. The *White Alyssum* and *Purple Candytuft* form a pleasing contrast when mixed in equal proportions, and also the *Dwarf Gillia* and *Blue Pimpernel*.

Phlox Drummondii is, perhaps, the most desirable of all annuals to flower alone in the beds, than which nothing can be more beautiful. "Every flower, though of the deepest earmine, has its petals of a pale blush color on the under side, and every petal, though of the palest pink, has a dark earmine spot at its base. Thus the variety of colors displayed in a bed of these flowers, almost exceeds description; and when they are seen under a bright sun, and agitated by a gentle breeze, the effect is extraordinarily brilliant."

Next to this, the *Portulacas* will be found, perhaps, most acceptable for individual beds or borders, either the *purple* and *scarlet* separate, or combined with the newer *white* and *yellow* varieties. *Rocket Larkspurs* too, sown in rows, answer admirably the same purpose; but to have them in perfection, the seed should be sown in the border in September, and the young plants protected through the winter by a slight covering of straw or litter.

Cypress Vine, a universal favorite, frequently fails from being sown too early. In this vicinity it should not be trusted in the open ground much before the first of June, and the seed should be soaked for about half an hour in moderately warm water just before being sown. The seed should be planted about a quarter of an inch deep, and the soil well pressed down, moderately watered, and protected from the sun by a strip of board 4 or 5 inches wide: let the board remain pressing on the soil for about 48 hours, and on being removed the young plants will at once show themselves, and grow strongly.

For the preceding remarks we are mainly indebted to the "Young Gardener's Assistant," by Thomas Bridgeman, a work, which for practical utility, stands pre-eminent.

PRESERVING TREES FROM RABBITS.—A correspondent of the *London Gardener's Chronicle* states, that he has used the following mixture to preserve trees from injury by rabbits or other animals gnawing the bark: 4 oz. soft soap, and 6 oz. flower of sulphur to a gallon of water, with quicklime enough to bring it to the consistence of paint, and some (?) soot stirred in the mixture. Apply it with a brush to the trunks of young trees. The animals, it is said, will dislike the odor and leave the trees unharmed. He also recommends the mixture made thinner, to be applied with a syringe to gooseberry bushes, to prevent birds destroying the buds in Spring.

TO PRESERVE STAKES, &C., IN THE GROUND.

Quite recently, while walking in the garden with the Hon. J. W. Fairfield, Hudson, N. Y., he called my attention to the small stakes, which supported the raspberry canes. The end in the ground, as well as the part above, was as sound and bright as if lately made, but he informed me that they had been in constant use for twelve years? Said I, "Of course they are cyanized?" "Yes," he replied, "and the process is so simple and cheap that it deserves to be universally known, and it is simply this: One pound of blue vitriol to twenty quarts of water. Dissolve the vitriol with boiling water, and then add the remainder.

"The end of the stick is then dropped into the solution, and left to stand four or five days; for shingles, three days will answer, and for posts six inches square, ten days. Care is to be taken that the saturation takes place in a metal vessel or keyed box, for the reason that any barrel will be shrunk by the operation so as to leak. Instead of expanding an old cask, as other liquids do, this shrinks them. Chloride of zinc, I am told, will answer the same purpose, but the blue vitriol is, or was formerly very cheap, viz, three to six cents per pound."

Mr. Fairfield informed me that the French government are pursuing a similar process with every item of timber now used in ship-building, and that they have a way of forcing it into the trees in the forest as soon as cut, ejecting the sap and cyanising it all on the spot. I have not experimented with it, but Mr. Fairfield's success seemed to be complete.

The process is so simple and cheap as to be within the convenience of every farmer, and gardener even, and I therefore thought it so valuable as to warrant a special notice of it.

R. G. PARDEE.

MANURE FOR STRAWBERRIES.—The following is from a communication to the *Friend's Review*, and may be very useful to many of our readers:

The writer had a very productive bed, 30 by 40 feet. "I applied," says he, "about once per week, for three times, commencing when the green leaves first begin to start, and made the last application just before the plants were in full bloom, the following preparation: Nitrate of potash, (saltpetre,) glauber salts and sal soda, (carbonate of soda,) each one pound, nitrate of ammonia, one quarter of a pound—dissolving them in 30 gallons of river or rain water. One-third of this was applied at a time, and when the weather was dry, I applied clear soft water between the times of using the preparation, as the growth of the young leaves is so rapid, that unless supplied with water, the sun will scorch them. I use a common watering pot, making the application towards evening. Managed in this way, and the weeds kept out, there is never any necessity of digging over the bed, or setting out new. Beds of ten years are not only as good, but better than those two or three years old.

WOOD-ASHES FOR THE PEA-BUG.—If it would be of use to any one, I would say, that a sure cure for the pea-bug will be found in wood-ashes. Wet the seed, then put in ashes enough to dry sufficiently for sowing, and your crop will be free from them, as I have proved more than once.

L. G. DEAN.

Morrisville, N. Y., 1859.

ARRANGEMENTS OF TREES IN ORCHARDS.

It has frequently occurred to me that much land is wasted which would be saved if the idea was presented to the mind of farmers and gardeners. It is in this way: If a farmer wishes to plant an orchard, and wishes the trees to stand any certain distance apart, say thirty feet, the usual practice is to plant the trees in rows thirty feet apart, and the trees separated in the rows by the same distance, and forming squares. Now if the above distance from tree to tree is desired, and the trees are planted as above, one acre will accommodate forty-nine trees thirty-feet apart in the rows, and a fraction over forty-two feet diagonally; but if the rows are twenty-six feet apart, and the trees planted thirty feet apart in the rows, and the trees of one row planted opposite the space of the next row, the acre will accommodate fifty-six trees thirty-feet apart in every direction.—The same principle holds good for cabbage and other plants, and for other desired distances.

BEST TIME FOR SOWING CLOVER SEED.—Thomas R. Blandly Esq., in the *Southern Planter*, gives the following as his experience in sowing clover seed:

"At what seemed a very favorable time in February, 1854, I commenced sowing clover seed. Some thing interfering, I did not finish before the tenth of April. Finding that whereas what was sown in February did not stand at all, what was sown in April, stood very well, I concluded in 1855 to try again the relative advantage of seeding at different times. Therefore I seeded part in February, part in March and part in April. The result was, that although that sown in February was on tobacco lots, that sown in April on the old field stood much the best. That sown February and March was tolerably good. This year I have sown altogether during the first week in April, and now it looks finely, having come up well. I did nothing to it after sowing. In April, I endeavored to select a time when the ground was dry; in the other months when the ground was puffy from freezing and thawing.

LADIES AND AGRICULTURE.—There is a great deal of mock modesty in this world. Some people make such pretensions to refinement that they cannot bear the sight of a matchless bull or a model cow, without exclamations of wonder. We don't believe in such modesty as this. God gave man dominion over the lower orders of creation, undoubtedly, with the expectation that he should see and know them, and whoever ignores this fact, ignores a fundamental law of creation. There is nothing unwomanly in the idea that a lady is able to "converse wisely and wittily" with a gentleman on agricultural topics. Ladies ought to be posted on the subjects which deeply interest their fathers, husbands, brothers and beaux. Every woman should have an intelligent sympathy with her husband's calling, and render him all necessary co-operation. Reading agricultural books is full as healthful to the mind of either sex as reading novels, and walking in the fields full as profitable as shopping, for exercise. So saith the *Springfield Republican*, very sensibly.

The plow passes over Bosworth field, where the war of the Roses was ended by the death of Richard III. The bloody plain of Waterloo is a farm; and the battle ground of San Jacinto has become a sheep range.

From the American Agriculturist.

HEALTHFULNESS OF FRUIT.

Many persons suppose that fruit is unwholesome, especially for children, because their mortality is so great at the time when fresh fruits begin to abound in market. Undoubtedly the eating of green or partly decayed fruits is injurious to both young and old persons; it was not made to be eaten; though green fruit is little harmful if well cooked. But it is not correct to ascribe the sickness and death of so many children to fruit eating. On examining the bills of mortality of any large town, we shall find that the increase of deaths among children in summer is almost exclusively of those under five years of age, and principally of those under two years.—Of course they eat little or no fruit. The deaths at the same season among persons between five and twenty-five, those most likely to indulge too freely in fruits, is less than in winter. The mortality, therefore, of the summer season is more probably owing to the increase of heat than to fruit eating. The excessive heats of the day, followed by exposure to the chilly damps of the even-dewing, may help to account for much of the sickness of children in the fruit season.

We once met with the following extract from the London *Lancet*, a high medical authority. Referring to the health of London, during a week in the middle of August, the writer remarks: "The deaths ascribed to diarrhœa are 126, of which 115 occurred among children. The tender age of nearly all the sufferers, 97 of them not having completed their first year, is sufficient to dispel the popular error that the use of fruit is the exciting cause."

Now, let us carry the war into the enemy's country. Fruit, eaten in moderation, is positively wholesome, and its use is demanded by the peculiarities of the summer season. The most common diseases of summer, such as diarrhœa, dysentery and cholera, are bilious complaints, and require anti-bilious treatment. Fruits are anti-bilious. A kind Providence has caused them to abound at just the season when they are most needed. In the winter we may devour meat of all sorts, both fat and lean, and other kinds of food containing much carbon and nitrogen, and no harm will perhaps come from it, because the rigors of the season call for such nutriment; and free exercise in the open air will burn up the carbon: but during the summer season a different style of living is required. Experience shows that during the latter season less meat should be eaten, and a greater proportion of vegetables and fruits. The natives of tropical climates long ago found this out, and they act accordingly; while northerners, going there to reside, and keeping up their usual habits of high living, soon fall victims to bilious diseases.

There should be moderation, of course, in the use of a good thing. Fruit should be ripe, if eaten raw. It is better to eat it early in the day, and the stomach should never be overloaded with it.

BLOWING OUT A CANDLE.—There is one small fact in domestic economy which is not generally known, but which is useful as saving time, trouble and temper. If the candle be blown out holding it above you, the wick will not smoulder down, and may therefore be easily lighted again; but if blown upon downward, the contrary is the case.—*Scientific Artisan.*

MAKE FARM LABOR FASHIONABLE.

At the base of the prosperity of any people lies this great principle—*make farm labor fashionable at home*. Educate, instruct, encourage; and offer all the incentives you can offer, to give interest and dignity to labor *at home*. Enlist the heart and the intellect of the *family* in the support of a domestic system that will make labor attractive at the homestead.—By means of the powerful influences of early home education, endeavor to invest practical labor with an interest that will cheer the heart of each member of the family, and thereby you will give to your household the grace, peace, refinement and attraction, which God designed a *home* should possess.

The truth is, we must *talk* more, *think* more, *work* more, and *act* more, in reference to questions relating to *home*.

The training and improvement of the physical, intellectual, social and moral powers and sentiments of the youth of our country, require something more than the school-house, academy, college and university. The young mind should receive judicious training in the field, in the garden, in the barn, in the work-shop, in the parlor, in the kitchen—in a word, around the hearthstone at *home*.

Whatever intellectual attainments your son may have acquired, he is unfit to go forth into society if he has not had thrown around him the genial and purifying influences of parents, sisters, brothers, and the *man-saving* influence of the family government. The nation must look for virtue, wisdom and strength, to the education that controls and shapes the *home policy* of the family circle. There can be no love of country where there is no love of home. Patriotism true and genuine, the only kind worthy of the name, derives its mighty strength from fountains that gush out around the hearthstone; and those who forget to cherish the household interests, will soon learn to look with indifference upon the interests of their common country.

We must cultivate the roots—not the tops. We must make the *family government*, the school, the farm, the church, the shop, the agricultural fairs, the laboratories of our future greatness. We must educate our sons to be farmers, artisans, architects, engineers, geologists, botanists, chemists—in a word practical men. Their eyes must be turned from Washington to their States, counties, townships, districts, *homes*. This is true patriotism; and the only patriotism that will perpetually preserve the nation.—Governor Wright.

AN ELOQUENT EXTRACT.—Generation after generation have felt as we do now, and their lives were as active as our own. The heavens shall be as bright over our graves as they are around our paths. Yet a little while and all this will have happened. The throbbing heart will be stilled, and we shall be at rest. Our funeral will have wended its way, and the prayers will be said, and we shall be left in the darkness and silence of the tomb. And, it may be, that for a short time we shall be spoken of, but the things of life shall creep on and our names shall be forgotten. Days will continue to move on, and laughter and songs will be heard in the room where we died; and the eyes that mourned for us be dried and animated with joy, and even our child will cease to think of us, and will remember to lisp our names no more.

EARLY ASPARAGUS AND RHUBARB EASILY OBTAINED.

The long cold winter is over, and the sight of something fresh and green, from the bosom of mother earth, would be refreshing. The dish of Asparagus, by all who know the article, is highly appreciated. It is among the earliest luxuries that come to the table, and one of the most healthful. At a dollar a bunch, it tastes of the silver, and the citizen, unless he own a mine, must indulge sparingly. But the villager or farmer, who owns a rod square of well stocked Asparagus, has a mine out of which to dig luscious shoots early in Spring, without a taste of copper even.

The professional gardener, of course, knows how to get them, with his hot-bed and forcing manures. Take good strong roots, three years old, and put them upon a bed of fermenting manure, and there is no difficulty. But, for several years past, we have found coaxing quite powerful enough to induce our favorite vegetable to anticipate the season three weeks. We put upon the bed a simple board frame, twelve feet by six, and cover it with sashes. The frame inclines to the sun, about one foot in the six. The outside of the frame is banked up with horse manure, or any coarse litter, to keep out the cold.—Between the rows of Asparagus, which are about eighteen inches apart, we sow lettuce, radishes, peppergrass, or anything else of a hardy nature, that we wish to get early. The glass retains the heat of the sun by day, and keeps off the cold by night.—The surface heat brings up the seeds in a few days, and a little later, the purple shoots of Asparagus make their appearance. They grow almost as rapidly as in June, and are quite as tender and good flavored.

We secure early Rhubarb by the same method, without disturbing the roots, and put in about a bushel of stable manure, or rich compost, around each crown. The sashes are then put over, and no air is given until the crowns begin to make their appearance above ground. Indeed, the leaves are not liable to burning, and the sashes require very little attention until the stalks are fit to cut. The Myatt's Linnæus is admirable for this kind of forcing, and, all things considered, is the best variety we have ever cultivated. The sashes may be put over Asparagus and Rhubarb now.—*Am. Agriculturist.*

SANITARY PRECAUTIONS.—In the height of summer all persons are especially called upon to look around their dwellings, and consider whether there is not something unfriendly to health that might and ought to be removed without delay. Constant attention is requisite, that nothing offensive be suffered to remain within doors. Liquor in which vegetables have been boiled, soap-suds, dirty water of every kind, should be immediately thrown away; also cabbage-stalks, potato-peeling, and offal of every kind. The liquor in which greens have been boiled, if suffered to remain even a few minutes, or thrown down a scullery drain, emits a most unpleasant and unwholesome smell, which pervades the whole house. Many very cleanly people are not attentive to this particular.—Among other things that require attention, fallen leaves should be frequently swept up and properly disposed of. In doors every room should be swept and dusted daily, care being taken not merely to make a decent surface, but thoroughly to cleanse under beds, drawers, tables, and other furniture, and to clean out all closets and lumber holes.

INSECT LIFE.—The devastations by insects are not noticed, because so insidiously made; but if our eyes could but be opened to the activity of our little foes, consternation would seize us. Go into our forests, and we see every portion of our trees attacked by some insect—trunk, bark, leaves and roots—all having their peculiar depredators. The sweeping away of our forests compels the insects which formerly fed upon them to turn to the orchard, which have replaced the forests. We shall, before many years, see our apple-tree branches lopped off, as are the limbs of the common red-oak, and by the same insect, the “oak-pruner.” Foreign insects have been imported in the thousand commodities, and the numberless trees and plants which we import, and these have proved the most pernicious foes to our crops and trees. Our crops and climate favoring their development, they multiply to a frightful extent, and do far greater damage here than they did in Europe.—The insect is divided into three parts, viz: head, thorax or fore-body, and abdomen. The head is furnished with antennæ or horns, which possess remarkable sensitiveness. Thus, an ichneumon fly, by touching them against the outer surface of a bark in which, at even the depth of two or three inches, a worm is buried, knows if it is his food, and just where it is lodged; and two bees, by touching their horns together, know if they come from the same hive and are brothers, for all the world, as if there were a system of freemasonry among them. The most wonderful thing about insects is their metamorphosis from one condition to another, so different that one might as well expect a serpent to change to an eagle. The insect life is divided into four stages—first, the egg; second, the larva; third, the pupa; fourth, the perfect insect. An insect may be known to have matured when it has wings; or, if it be a wingless variety, its maturity is known by its depositing eggs. Grass-hoppers and plant-leaf bugs are an exception to the four-staged life, for they grow from larva directly into full-grown insects. Insects have, however much we may despise them, a real use in creation. They keep down the excess of vegetation, and without such provision of nature, the world would be immediately overrun with plant life. By a careful scrutiny of the whole history and transformation of noxious insects, we are sure to find a vulnerable point, by attacking which we may destroy them. Although Achilles was covered with an ægis, he was found vulnerable in the heel.—*Dr. Asa Fitch.*

GRAFTING THE GRAPE.—The Editor of the *American Cotton Planter*, says:

“Having practised grafting grapes for the last ten years, I never found any difficulty in this operation; in fact they graft as easily as any other fruit. Instead of propagating grape vines as is usually done by a single eye as a cutting, I always found it a more sure way to graft them to a piece of root, and if it be a rare kind, of a long jointed growth, as American grapes generally are, one bud was sufficient. I hardly ever lost more than five per cent. I never used any grafting wax, but planted the grafts in the ground immediately, and covered, consequently, the united piece with earth. This is undoubtedly a much safer plan than relying on single buds as cuttings. When grafting on stumps, taking two or three buds on the graft, I have sometimes had grapes the first season, but always a fair crop the second summer.

The Apiary.

"In the nice bee what sense so subtly true,
From poisonous herbs extracts the healing dew."

APIARY IN MARCH.

BY M. QUINBY.

If the air passages of the hive are open, the bees need not be disturbed until the frost about them is gone, when dead bees, wax, chips, and other filth should be removed. It can be done more thoroughly by using an extra bottom board. Raise the hive gently, and put under it the clean board, then clean off the other, and change with the next hive and so on through the whole. Each hive must occupy its old position. Clusters of dead bees between the combs should now be removed before they mold; any combs already moldy should be cut off. As soon as there is a day sufficiently warm for the bees to fly freely take a look some morning while they are quiet, to ascertain the strength of each colony. If weak, close the entrance so as to allow only one bee to pass at a time, to prevent robberies. Such as are destitute of honey, must be fed—honey is the best material—a box of sealed honey set on the hive is the most convenient method of doing it—sugar made into syrup will do in the absence of honey. Sticks of sugar candy thrust in between the combs are said to be very valuable. If any stock has lost its queen during winter—which about one in fifty will do—the bees will be very likely to desert on the first good day for flying, and join some other, usually, without any quarreling. The hive left should be immediately eared for, or the bees will carry off the honey. Should the combs in this be bright and new, they are of more value as they are, than to be removed. They may be kept for a new swarm, but they must be smoked once or twice with brimstone, to kill the moth worms as they hatch, otherwise they would injure instead of benefiting any swarm. A colony having diseased brood, or combs which are very old and black, may be advantageously transferred to a hive thus depopulated. The operation is best performed in a warm room, and it is better if there is only one window. The hive to receive the bees should not be frosty, or even very cold. Begin by smoking the bees a little, and inverting the hive, set over it the one to receive the swarm, stopping all passages, strike the lower hive rapidly, but not very hard, fifteen or twenty minutes, when the upper one may be set aside, and an empty one substituted to receive the remainder of the bees by the same process. Should any refuse to leave by this means—which they will sometimes do at this season—cut out the combs, and with the feather end of a quill, brush them either directly on the combs of the other hive, or by the bottom of it, when right side up—when they will enter. Such bees as have gathered on the window, with those driven into the second hive, may also be swept and shaken down by the entrance, and the hive closed up for a few hours. But should the day be warm enough, put it directly on its stand without closing it, and allow those that gathered on the window to return of themselves after being brushed out. The only danger of stings during the operation, is at the commencement, and not then if smoke is judiciously used. This should always be done as early in the season as possible, otherwise many of the advantages are lost. These directions

apply also to transferring into light hives that were set away in the fall for this purpose. The advantage of feeding rye meal was further indicated last season, especially in sections where there are not many early pollen bearing flowers. One correspondent fed rye and buckwheat meal mixed, and got a swarm in May, which had not occurred before in ten years, it was also several weeks in advance of his neighbors. This is worthy of further experiment, and comparing the results with other seasons. The best way that I have found, is to make a sort of floor a few feet square, and nail around the edge some strips three or four inches wide, so that the bees will not waste it off the edges. A few quarts of meal at a time spread on this, is readily taken by the bees. Unbolted flour appears to be the best, flour mixed with saw dust will do. If flour alone is given, it will adhere to their bodies and they seem to lose time in removing it. Bees that are in the house may be put out the first fine days, when the air is warm. Set out a few at a time, on stands as far apart as possible, when these have mostly been out and returned, set others between. If the weather is warm enough to make them uneasy in the room, before it is right out of doors, a bushel or two of snow, or pounded ice, will cool them for a time. When opening the door to carry them out, should they be anxious to leave, and be lost by creeping out, introduce some tobacco smoke into the room to quiet them. If severe weather occurs after they are out, the weaker ones may be returned to the house. Close some of the air passages which are not needed now, and confine the animal heat to assist in developing the brood. Clear sunshine with a newly fallen snow is fatal to many bees; they should be confined to the hive, either by shading, or closing the entrance for a few hours at such time. Keep all refuse honey, or that in any hive unprotected by a colony, out of reach of the bees, it is quite sure to induce pillaging habits.—*American Agriculturist*.

RULE FOR SELECTING A GOOD COW.

The following hints upon selecting good cows are well worth attention.

But I am not in favor of the rule of selecting cows that yield the most milk per day or season, in arriving at a proper standard of excellence for the best. * * * The quality of milk a cow will give, is indicated by hair and skin, and yellow color of the skin inside of the ears and other parts not thickly covered with hair. I have never known a cow, with soft, fur-like hair and mellow skin, appearing yellow and gummy at the roots of the hair when parted with the hands, that was not a good butter cow, and when fattened, would mix tallow well with flesh. Having been accustomed to fatten my cows that failed for dairy purposes, by age or otherwise, for many years, and being on the lookout for causes of known results, I have observed that those known to give good milk, made most thrift in tallow when fed to fatten. Hence, the conclusion, that cows that handle well in what the butchers call tallow joints, may be judged to give rich milk, the quantity to be judged by a plainly marked design of nature in her physical structure. Instead of heavy head, horns, neck and shoulders, and comparatively light hind quarters, which is characteristic of the opposite sex, she should show an opposite design, by a feminine countenance, light head, neck and shoulders, widening backward from her chest to the loin and hind quarters, where the most strength is required.

Domestic Economy, Recipes, &c.

THE NEW UNFERMENTED BREAD.—There can be no doubt that the newly discovered aerated bread will prove a blessing to many, whose stomachs could not digest the ordinary bread raised by fermentation.—It is now being regularly made and sold in Loudon, and is eagerly sought after by a large class of people, to whom fermented bread had been prohibited by the doctors. The process of making the bread consists in forcing the ready prepared carbonic acid, by means of suitable machinery, into the water with which the dough is prepared, then mixing the flour, water and salt together, in a highly condensed atmosphere. From the mixing apparatus the dough is received into the baking pans, and passed into the ovens, without being touched by the hands. By this means the consistency in the flour is left both unchanged and uncontaminated—the loaf being accordingly absolutely pure bread.

FRIED POTATOES.—How few cooks know how to fry potatoes. There is nothing so easy to get and yet so palatable for breakfast, with a thick tender beef-steak, or a mutton chop fizzing from the grid-iron. To fry raw potatoes properly, they should be pared, cut lengthwise into slices an eighth of an inch in thickness, dropped into a pan over the fire, containing hot beef drippings, turned frequently, nicely browned all over, but never burned. The addition of a little salt and pepper, while in the pan, and a little flour dredged over them, is an improvement.—(So says some anonymous but sensible cook.) We have, however, found that a thick slice of good salt pork, instead of the “beef drippings,” answered well. Every one to his taste.

A CURE FOR SCROFULA.—I am constantly receiving letters requesting me to send the cure for scrofula, published by you about a year since. I have never known it to fail to cure the scrofula, even in its worst stage, and I have reports of its curing old sores; I believe that it can in no case do injury.—This is the direction: Put two copper cents in a cup and pour on them one ounce of aquafortis, and two ounces of pure, strong vinegar. There will be a strong sparkling. Leave the cents in. Apply it to the sore twice a day, with a soft brush or rag. Before using it, wash the sore with a rag wet with warm water. It will, and should, give pain. If too severe, add to it a little pure rain water. Where used, I shall be pleased to be informed of the result.

N. LONGWORTH.

Cincinnati, June 20th, 1859.

A HOUSE REMEDY FOR SCARLET FEVER.—Parents should be very careful about their children, when this devouring plague seizes them, and every good mother should be prepared for it with the following simple remedies:

1st. When a child is taken with the fever give it a dose of castor oil; if the body shows a flush color have a pot of saffron tea made and give it to the child to drink. This will drive the eruption out.

2d. Have warm baths for their feet—keep it warm—and the room under a proper temperature.

3d. When the eruption is out, grease the whole body with bacon fat, and keep the body open. Then call for a doctor if the throat should get sore.

[Better begin by calling in the doctor.]

HOW TO MAKE TOMATO FIGS.—Pour boiling water over the tomatoes in order to remove the skin; then weigh them and place them in a stone jar, with as much sugar as you have tomatoes, and let them stand two days; then pour off syrup, and boil and skim it until no scum rises. Then pour it over the tomatoes, and let them stand two days as before, then boil and skim again. After the third time they are fit to dry, if the weather is good; if not, let them stand in the syrup until drying weather. Then place on large earthen plates or dishes, and put them in the sun to dry, which will take about a week, after which pack them down in small wooden boxes, with fine white sugar between every layer. Tomatoes prepared in this manner will keep for years.

REMEDY FOR HEADACHE.—A correspondent writes as follows:

“My remedy for the headache is to take one-fourth to one-third of a teacupful of green tea, steep it well and drink it, and if the pain in the head is not relieved within ten minutes, repeat the dose, and, if necessary, take the third dose. This remedy has never failed to cure in my case; and the only unpleasant effect of the tea, when several doses are taken, is, to render one rather wakeful at night.”—A. C. in *Miner's American*.

THE CROUP.—The *Journal of Health* says:—“When a child is taken with croup, instantly apply cold water—ice water, if possible—suddenly and freely to the neck and chest with a sponge. The breathing will almost instantly be relieved. Soon as possible let the sufferer drink as much as it can; then wipe it dry, cover it warm, and soon a quiet slumber will relieve all anxiety.” A friend of ours who has repeatedly tried this remedy informs us that it never failed to afford almost instant relief.

TO REMOVE STAINS FROM THE HANDS.—A few drops of oil vitriol (sulphuric acid) in water will take the stains of fruit, dark dyes, stove blacking, &c., from the hands, without injuring them. Care must, however, be taken, not to drop it upon the clothes. It will remove the color from woolen; and eat holes in cotton fabrics.

TEA-CAKE MUFFINS.—One quart of milk, five eggs, one tablespoonful of good yeast; if home-made, three or four tablespoonsful. A lump of butter the size of a walnut, and enough flour to form a stiff batter. Set them to rise, and when light, bake them in rings.

FANCY FROTH FOR BLANC MANGE OR CREAMS.—Beat the whites of four eggs to a froth, then stir in half a pound of preserved raspberries, cranberries, or strawberries. Beat the whole well together, and then pour it over the top of your creams or blanc mange.

FRUIT STAINS IN LINEN.—To remove them, rub the part on each side with yellow soap, then tie up a piece of pearl-ash in the cloth, etc., and soak well in hot water, or boil; afterwards expose the stained part to the sun and air until removed.

CREAM CUSTARD.—Mix a pint of cream with one of milk, five beaten eggs, a tablespoonful of flour, and three of sugar. Add nutmeg to the taste, and bake the custard in cups or pie-plates in a quick oven.

PREMIUM LIST

OF THE

STATE AGRICULTURAL SOCIETY

FOR THE

FIFTH ANNUAL FAIR,

TO BE HELD AT

COLUMBIA, SOUTH CAROLINA,

On the 13th, 14th, 15th and 16th of November, 1860.

Field Crops.

SHORT STAPLE COTTON.

The greatest production upon ten acres of restored upland, by the aid of DOMESTIC MANURES, with the mode of cultivation, the amount and kind of manure used, the preparation of the soil, period of planting, the number of times plowed and hoed, *the variety of cotton*. The land to be measured, and the cotton to be weighed and vouched for by affidavit, \$40

Same, upon five acres, under same requisitions..... 30

Same, upon two acres, under same requisitions..... 20

Same, upon one acre, under same requisitions..... 10

Same premiums, under same requisitions, by the aid of mineral or imported manures.

CORN.

The largest crop of corn grown upon 20 acres or more of restored upland; the mode of planting, manuring, kind of manure used, and variety of corn stated, under same requisitions..... 30

The largest crop of corn upon 10 acres, under the same requisitions..... 20

Largest crop of corn on 5 acres, same requisitions.. 15

Largest crop upon one acre, same requisitions..... 10

Same premiums upon restored or reclaimed lowland, under same requisitions.

WHEAT.

Largest yield of wheat, on 20 acres, or more, under same requisitions as above, in all particulars, and to weigh 60 lbs per bushel..... 30

Same, on ten acres, under same requisitions..... 20

Same, on five acres, under same requisitions..... 15

Same, on one acre, under same requisitions..... 10

OATS.

Largest yield of oats on ten acres, under same requisitions as above..... 20

Same on five acres, under same requisitions..... 15

Same on one acre, do do do 10

RYE.

Largest yield of rye on one acre..... 10

BARLEY.

Largest yield of Barley on one acre..... 10

HAY.

Largest yield of pea-vine hay on one acre..... \$10

Second largest, do. do. do. 5

Largest yield Native Grass, on one acre..... 10

Second largest yield of same on one acre..... 5

Largest yield of Clover on one acre..... 10

Second largest yield of Clover on one acre..... 5

Largest yield Herds or Foreign Grass on one acre... 10

Second largest yield of same on one acre..... 5

One Bale of each to be on exhibition, and affidavit of the facts filed with the Secretary.

POTATOES.

Largest yield of Sweet Potatoes on one acre (one-eighth of an acre to be dug,)..... 10

Second best of same, under same requisition..... 5

Largest yield of Irish Potatoes, under same requisition. 10

Second largest yield of same, under same requisition 5

PEAS.

Largest yield of Peas on one acre..... 10

Second largest yield of Peas on one acre..... 5

Largest yield of Pindars on one acre..... 10

Second largest yield of Pindars on one acre..... 5

Largest yield of Turnips on one acre..... 10

Second largest yield of Turnips on one acre..... 5

To the farmer or planter who makess the largest nett yield of crops per hand, under same requisitions, for 1860..... 30

As cotton and turnips cannot be gathered by the time awards are made at the Annual Fair, all competitors for those crops must send in their statements to the Executive Committee by the 15th December, by whom the awards will be made.

Exhibitors of all the above crops must *state*, in writing, *in full*, to the Secretary, all the requisitions as laid down for corn, cotton, &c., as above, when the articles are entered upon his books for exhibition, with the certificates for the measurement of lands, and pounds and bushels per acre; without which the Judges will be required to withhold their awards, and exhibitors not complying with these requisitions will not be allowed to compete for the premiums of the Society.

N. B.—Competitors will bear in mind, that the above premiums are offered for crops grown upon swamp or lowland reclaimed by skill and judicious treatment, or upland restored by mineral or domestic manures, &c., to

a condition of fertility. The plats must be distinct, i. e., a premium will not be awarded to the best two acres, and the best one acre of the same two acre plat.

SAMPLES OF FIELD CROPS.

Best bushel of white wheat, with a sheaf of the same	\$ 5
Second best bushel of white wheat, with sheaf of the same	Silver.
Best bushel of red wheat, with sheaf of same	5
Second best bushel of red wheat, with sheaf of same	Silver.
Best bushel of Bread Corn, with one dozen ears	5
Second best bushel of same, with one dozen ears	Silver.
Best bushel of Stock Corn, with one dozen ears	5
Second best bushel of same, with one dozen ears	Silver.
Best bushel of Barley	5
Second best bushel of Barley	Silver.
Best bushel of Oats	5
Second best bushel of Oats	Silver.
Best bushel of Rye	5
Second best bushel of Rye	Silver.
Best bushel of Pindars	5
Second best bushel of Pindars	Silver.
Best collection of Field Peas, $\frac{1}{2}$ bushel each	5
Second best collection of same, with $\frac{1}{2}$ bush. each	Silver.
Best bushel Grass Seed, adapted to Low Land culture	5
Best bushel Grass seed, adapted to Upland culture	5
Best bushel Sweet Potatoes	5
Second best bushel of same	Silver.
Best bushel of Irish Potatoes	5
Second best bushel of same	Silver.
Best bushel Table Turnips	5
Second best bushel of same	Silver.
Best bushel Stock Turnips	5
Second best bushel stock turnips	Silver.
Best bushel Mangel-Wurzel, or other stock Beet	5
Best Bale of Pea-Vine Hay	5
Second best Bale of same	Silver.
Best Bale of native grass hay	5
2d best bale of native grass hay	Silver.
Best bale of Cultivated grass	5
2d best bale of Cultivated grass	Silver.
Best variety of Long Staple Cotton, (six stalks)	5
Best variety of Short Staple Cotton, (six stalks)	5
Best bushel water-flowed seed Rice, with sheaf of the same	5
2d best bushel of water-flowed seed Rice, with sheaf of the same	Silver.
Best bushel of upland seed Rice, with sheaf of same	5
2d best bushel upland seed Rice, with sheaf of same	Silver.
Best specimen Leaf Tobacco	5
2d best specimen Leaf Tobacco	Silver.
Best Box South Carolina made Cigars, from South Carolina raised Tobacco	5
To the exhibitor of the largest and best variety of Field Crops, grown by himself	10
Best sample of Rice (one quart) selected from a lot of not less than 20 barrels, with the certificate of factor of the sale	5
For the best specimen Hops, not less than one peck	5
For the best specimen of Pumpkins	5

Exhibitors of crops must give in writing to the Secretary, a full account of each crop offered, its adaptation for profitable cultivation, &c. Exhibitors of hay must give the mode of cultivating, curing, harvesting, &c.

COTTON BALES AND WOOL.

Best one bale of upland Cotton	\$20
2d best one bale of upland Cotton	10
Best one bale of Sea Island Cotton	20
2d best one bale of Sea Island Cotton	10
Best bale of wool not less than 100 lbs	20
2d best bale of wool, as above	10

The cotton and wool must be on the Fair Grounds during the Exhibition to claim the premium, and must be of superior quality.

Domestic Animals--Cattle.

FIRST CLASS.—DEVONS.

Best Bull, 3 years old or upwards	\$15
2d best Bull, same age	10
Best Bull, 2 to 3 years old	12
2d best Bull, 2 to 3 years old	8
Best Bull, 1 to 2 years old	5
2d best Bull, 1 to 2 years old	Silver.
Best Bull Calf	Silver.
Best Cow, 3 years old or upwards	15
2d best Cow, 3 years old or upwards	10
Best Heifer, 2 to 3 years old	12
2d best Heifer, 2 to 3 years old	8
Best Heifer, one to two years old	5
2d best Heifer, one to two years old	Silver.
Best Heifer Calf	Silver.

SECOND CLASS—DURHAMS OR SHORT-HORNS.

Best Bull, three years old, or upwards	\$15
2d best Bull, three years old or upwards	10
Best Bull, two to three years old	12
2d best Bull, two to three years old	8
Best Bull, one to two years old	5
2d best Bull, one to two years old	Silver.
Best Bull Calf	Silver.
Best Cow, three years old or upwards	15
2d best Cow, three years old or upwards	10
Best Heifer, three to four years old	12
2d best Heifer, two to three years old	8
Best Heifer, one to two years old	5
2d best Heifer, one to two years old	Silver.
Best Heifer Calf	Silver.

THIRD CLASS—AYRSHIRES.

Best Bull, three years old or upwards	15
2d best Bull, same age	10
Best Bull, two to three years old	12
2d best Bull, two to three years old	8
Best Bull, one to two years old	5
2d best Bull, one to two years old	Silver.
Best Bull Calf	Silver.
Best Cow, three years old or upwards	15
2d best Cow, three years old or upwards	10
Best Heifer, two to three years old	12
2d best Heifer, two to three years old	8
Best Heifer, one to two years old	5
2d best Heifer, one to two years old	Silver.
Best Heifer Calf	Silver.

FOURTH CLASS—BRAHMINS.

Same premiums as above. All animals one-fourth Brahmin blood, or more, to compete.

Imported Cattle.

FIFTH CLASS.

Best imported Bull, of any age, of any of the above breeds	15
2d best imported Bull, of any age, of any of the above breeds	10
Best imported Cow, same as above	15
2d best imported Cow, same as above	10

SIXTH CLASS—GRADES.

Same premiums as above. All grades to be half blood or more.

SEVENTH CLASS—NATIVES.

Same premiums as above.

EIGHTH CLASS—MILK COWS AND OXEN.

Best Milk Cow, of any breed	\$15
2d best Milk Cow, of any breed, to be milked on the ground	10
Best yoke of Oxen, South Carolina raised	10
2d best yoke of Oxen, South Carolina raised	5

Best Herd of not less than seven, owned by exhibitor \$10
Under this class, animals that have received premiums at former exhibitions may compete.

Horses.
Owned by residents of this State, unless otherwise specified.

FIRST CLASS—HEAVY DRAFT HORSES.

Best Stallion over four years old.....	\$15
2d best Stallion over four years old.....	10
Best Stallion over three years old.....	12
2d best Stallion over three years old.....	8
Best Stallion over two years old.....	10
2d best Stallion over two years old.....	5
Best Stallion one year old.....	8
2d best one year old.....	5
Best Brood Mare.....	12
2d best Brood Mare.....	10
Best brood Mare and Colt.....	15
2d best brood Mare and Colt.....	10
Best Filly three years old.....	12
2d best Filly three years old.....	8
Best Filly two years old.....	10
2d best Filly two years old.....	5
Best Filly one year old.....	8
2d best Filly one year old.....	5

SECOND CLASS—LIGHT DRAFT HORSES.

Best Stallion over four years old.....	\$15
2d best Stallion over four years old.....	10
Best Stallion over three years old.....	12
2d best Stallion over three years old.....	8
Best Stallion over two years old.....	10
2d best Stallion over two years old.....	5
Best Stallion one year old.....	8
2d best one year old.....	5
Best Brood Mare.....	12
2d best Brood Mare.....	10
Best Brood Mare and Colt.....	15
2d best Brood Mare and Colt.....	10
Best Filly three years old.....	12
2d best Filly three years old.....	8
Best Filly two years old.....	10
2d best Filly two years old.....	5
Best Filly one year old.....	8
2d best Filly one year old.....	5

THIRD CLASS—BLOOD HORSES.

Best Stallion over four years old.....	\$15
2d best Stallion over four years old.....	10
Best Stallion over three years old.....	12
2d best Stallion over three years old.....	8
Best Stallion over two years old.....	10
2d best Stallion over two years old.....	5
Best Stallion one year old.....	8
2d best one year old.....	5
Best Brood Mare.....	12
2d best Brood Mare.....	10
Best Brood Mare and Colt.....	15
2d best Brood Mare and Colt.....	10
Best Filly three years old.....	12
2d best Filly three years old.....	8
Best Filly two years old.....	10
2d best Filly two years old.....	5
Best one year old Filly.....	8
2d best one year old Filly.....	5

FOURTH CLASS—PONIES, INCLUDING ALL SMALL VARIETIES.

Best Stallion over four years.....	\$15
Best Mare.....	10
Best Mare and Colt.....	15
Best Saddle Pony.....	15
2d best Saddle Pony.....	10

No animal over fourteen hands high to be classed as a pony.

FIFTH CLASS—MORGAN, CANADIAN AND IMPORTED HORSES.
Best and most thorough-bred Morgan Stallion, with

certificate of his purity on the side of his sire and dam, where and by whom raised. [If his history and certificates are not entirely satisfactory, the premium will not be awarded, and the Judges required to reject him.]... .. \$15
2d best Stallion, same requisition..... \$10
Best and largest Canadian Stallion, with certificate of purity, &c., same as above..... 15
2d best Canadian Stallion, same as above..... 10
Best Morgan Mare..... 12
2d best Morgan Mare..... 10

SIXTH CLASS—MATCHED AND SINGLE HORSES.

Best pair of Matched Horses, raised in So. Carolina.	\$30
2d best " " " " " "	20
Best pair Matched Mares, raised in South Carolina..	30
2d best pair " " " " " "	20
Best pair Matched Harness Ponies, under 14 hands, South Carolina raised.....	20
2d best pair Matched Harness Ponies, under 14 hands, South Carolina raised.....	15
Best single-harness Horse, raised in South Carolina	15
2d best single-harness horse, raised in So. Carolina	10
Best saddle Horse, raised in South Carolina.....	15
2d best saddle Horse, raised in South Carolina.....	10
Best pair of Matched Horses, (open to the world)...	20
Single harness Horse, (open to the world).....	10
Saddle Horse, (open to the world).....	10

GELDINGS.

Best heavy draft gelding, South Carolina raised....	10
Best light draft gelding, South Carolina raised, of any age.....	10
Best light draft gelding, South Carolina raised, 3 years old.....	8
Best light draft gelding, South Carolina raised, two years old.....	5
Best farm-horse team of four, South Carolina raised	15
To the Stallion exhibiting the greatest number of best colts upon the ground.....	20

EIGHTH CLASS—TROTTERS AND PACERS.
Fastest trotting stallion..... 15
Fastest trotting gelding or mare..... 15
Fastest pacer..... 15
N. B.—No horse can compete under two classes. Nor can a mare which has taken a premium as a Brood Mare at one Fair, take it as a Brood Mare and Colt at another, and VICE VERSA.

Jacks and Jennetts.
(To be owned in South Carolina.)
Best and largest imported Jack, with certificates, approved by the Society..... \$15
2d best imported Jack, same as above..... 10
Best and largest imported Jennette, with certificates, approved by the society..... 10
2d best imported Jennette, same as above..... 5
Best and largest South Carolina raised Jack, with certificates, approved by the society..... 15
2d best South Carolina raised Jack, same as above.. 10
Best and largest South Carolina raised Jennette, with certificates, approved by the society..... 10
2d best South Carolina raised Jennette, same as above 5

Mules.
(South Carolina Raised.)
Best pair of Mules..... 15
single or harness Mule..... 10
Best Mule two years old..... 10
2d best Mule two years old..... 5
Best one year old Mule..... 10
Best Mule Colt..... 5
Best Mule team of four..... 15

N. B.—All horses, colts, Jacks, Jennetts and Mules, embraced in the above classes, must be completely "halter broke," or they will not be admitted upon the grounds except at the owner's risk.

Sheep.
FIRST CLASS—MERINOS.
Best buck two years old or upwards..... \$8
2d best buck two years old..... 5

Best Buck one to two years old.....	\$ 5
2d best buck one to two years old.....	silver.
Best pen of Ewes, not less than three.....	8
2d best pen of Ewes, not less than three.....	5
Best pen of Ewe Lambs, not less than three.....	5
2d best pen of Ewe Lambs, not less than three.....	silver.

SECOND CLASS—SOUTHDOWNS.

The same premiums as above.

THIRD CLASS—LEICESTERS OR BAKEWELL.

The same premiums as above.

FOURTH CLASS—COTSWOLD OR NEW-OXFORD-SHIRE.

The same premiums as above.

FIFTH CLASS—AFRICAN OR BROAD-TAILED.

The same premiums as above.

SIXTH CLASS—GRADES.

The same premiums as above.

SEVENTH CLASS—NATIVES.

The same premiums as above.

Cashmere Goats.

Best thorough-bred buck.....	\$5
2d best thorough-bred buck.....	plate.
Best thorough-bred Ewe.....	5
2d best thorough-bred Ewe.....	plate
Best pair of Grades.....	5
2d best pair of Grades.....	plate.

Swine.

Best Suffolk Boar of any age.....	8
2d best Suffolk Boar of any age.....	5
Best Suffolk Boar not over twelve, nor under six months old.....	5
2d best Suffolk boar, same as above.....	silver

SECOND CLASS—ESSEX.

The same premiums as above.

THIRD CLASS—BERKSHIRE.

The same Premiums as above.

FOURTH CLASS—GRAZIER.

The same premiums as above.

FIFTH CLASS—CHESTER COUNTY.

The same premiums as above

SIXTH CLASS—LINCOLN, YORKSHIRE, LITCHFIELD, OR ANY OTHER LARGE BREED.

The same premiums as above.

SEVENTH CLASS—NATIVE BREEDS.

The same premiums as above.

Poultry.

Best pair of Southern raised Dorkins.....	silver.
pair barn-yard fowls.....	silver.
pair large Eastern fowls.....	silver.
pair game fowls.....	silver.
pair Mexican fowls.....	silver.
pair Seabright Bantams.....	silver.
pair Domestic Turkeys.....	silver.
pair Bremen Geese.....	silver.
pair Hong Kong Geese.....	silver.
pair small Chinese Geese.....	silver.
pair Muscovy Ducks.....	silver.
pair white Aylesbury Ducks.....	silver.
pair black Java Ducks.....	silver.
pair Poland Ducks.....	silver.
pair Native Fowls, D. H.,.....	silver.
pair Native Ducks.....	silver.
Best pair Native Geese.....	silver.

Household Department.

Best jar leaf Lard, thirty lbs.....	\$5
2d best jar leaf Lard, 30 lbs.....	silver.
Best twenty pounds hard domestic soap.....	5
2d best twenty pounds of same.....	silver.
Best five pounds of toilet soap.....	5
2d best five pounds of same.....	silver.

JELLIES, PRESERVES, PICKLES, &c.

Best sample of Jellies, Preserves, Pickles, Jams, Cat-sups, Syrups, &c., with full descriptions of the processes of manufacturing and keeping the same, each kind.....	silver.
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DRIED AND HERMETICALLY SEALED FRUIT.

Best half bushel of dried Apples, Peaches, Pears, Quinces and Plums, each.....	5
2d best specimen of same.....	silver.
Best box domestic Prunes.....	5
2d best specimen of same.....	silver.
Best drum dried Figs, preserved Olives, specimens of Olive Oil, Southern made and raised, each....	5
2d best specimens of same.....	silver.
Best specimens of hermetically sealed fruits, each.....	silver.

HAMS, FLOUR, BREAD, &c.

Best Ham, cooked.....	\$5
2d best Ham, cooked.....	silver.
Best barrel of South Carolina Flour, exhibited by the manufacturer.....	5
2d best barrel of South Carolina Flour, exhibited by the manufacturer.....	silver.
Best Loaf of Bread.....	5
2d best Loaf of Bread.....	silver.
3d best Loaf of Bread.....	silver fruit knife.
Best Fruit, Sponge, or Soda Cake, each.....	silver.
specimen Okra, or Tomato, prepared for winter use.....	silver.
gallon domestic Vinegar.....	silver.
specimen Tallow Candles.....	silver.
specimen prepared Cayenne Pepper.....	silver.
specimen Starch.....	silver.

For second best specimens of any of the above,
Silver Fruit Knife.

Best sample Chinese Sugar Cane Syrup.....	\$5
2d best sample of same.....	silver.
Exhibitors of Flour to state how much flour made from a bushel of wheat, and the variety of wheat the flour is made from.	

WINES, CORDIALS, &c.

Best specimen of domestic Wine, not less than three bottles of each kind, with full descriptions of the processes of manufacturing and keeping the same, for each kind.....	5
2d best specimen of same.....	silver.
Best specimen of Native Grape Wine, pure juice, made without the addition of any extraneous substance.....	\$ 5
2d best specimen of same, under same requisition.....	silver.

Dairy.

Best jar butter, ten pounds.....	10
2d best jar of butter.....	8
3d best jar of butter.....	5
Best jar of May or June butter.....	10
2d best jar of same.....	5
Best jar of Butter one year old, with method of preserving.....	10
2d best jar of same, under same requisition.....	5
Best South Carolina made Cheese.....	10
2d best South Carolina made Cheese.....	5

Apiary.

Best specimen of South Carolina Honey, 10 lbs....	5
2d best specimen of South Carolina Honey.....	silver.
Honey to be exhibited in the comb.	

Orchard and Nursery.

FRUITS.

Best 100 Oranges, open culture..... \$5

APPLES.

Best and largest variety of Table Apples..... 5

Best and largest collection of Southern Seedling Apples, each variety named and labelled, grown by the exhibitor..... 10

Best late seedling Apple, for all purposes, with description of the tree, history of its origin, keeping, &c..... 5

Best early seedling Apple, &c..... 5

PEARS.

Best and largest variety of Pears, grown by the exhibitor..... 10

Best late seedling, for all purposes, with description of tree, history, etc..... 5

Best early seedling, as above..... 5

PEACHES, QUINCES, GRAPES, &c.

Best collection of Peaches, seedling or others, grown by exhibitor..... 10

Best collection of Quinces..... 5

collection of Grapes, grown under glass..... 5

collection of native Grapes, with history of keeping, preserving, etc..... 5

Best dozen specimens of the Lime, Lemon, or other Southern fruits not named above, each..... silver.

APPLES.

(Grown in the State, and exhibited by the grower.)

Greatest number of good varieties, and best specimens, correctly named, at least three specimens of each..... 10

2d best specimens, subject to the same rules..... 5

For the best 12 varieties, and best grown and correctly named, three specimens of each..... 8

For the best 6 varieties, subject to same rules..... 5

For best seedling of recent origin, within three years, with certificate and history..... 10

PEARS.

(Grown in the State, and exhibited by the grower.)

Greatest number of good varieties, and best specimens, correctly named, 3 specimens of each... 10

2d best specimen, subject to the same rules..... 5

For best 10 varieties, best specimens, subject to same rules as above..... 8

For best five specimens, same as above..... 5

For best three specimens, same as above..... silver.

For best Southern seedling, of recent origin, within three years, with certificate of the fact, and history..... 10

FRUIT TREES, &c.

Largest and best collection of Southern seedling Apple Trees, grown by exhibitor..... 10

Largest and best collection of Peach Trees, grown by exhibitor..... 10

Largest and best collection of Pears, grown by exhibitor..... 10

Greatest variety and best collection of Strawberry plants..... 5

Greatest variety and best collection of Raspberry plants..... 5

Arboriculture and Floriculture.

Best collection of Evergreen Trees..... 10

collection of Green House plants, exhibited by one person..... 10

Largest collection of Flowers, exhibited by one person..... 10

Horticulture.

Best and greatest variety of Garden Vegetables, for table use, raised by one individual..... 5

A new and valuable variety of Vegetable, with evidence of its excellence or utility..... \$5

Best and largest collection of Garden Seed, Southern raised, not less than 20 approved varieties, exhibited by one individual, and best for Southern horticulture..... 5

Southern Domestic Fabrics.

Best pair Woolen Blankets..... \$5

2d best pair Woolen blankets..... silver.

Best pair Cotton blankets..... 5

2d best pair Cotton blankets..... silver.

Best pair Negro blankets..... 5

2d best pair of Negro blankets..... silver.

Best ten yards Negro Woolen Cloth..... 5

2d best ten yards of same..... silver.

Best ten yards Woolen Carpeting..... 5

2d best ten yards of same..... silver.

Best ten yards of Stair Carpeting..... 5

2d best ten yards of Stair Carpeting..... silver.

Best Cotton Carpeting..... 5

2d best Cotton Carpeting..... silver.

Best ten yards Woolen Jeans..... 5

2d best ten yards of Woolen Jeans..... silver.

Best ten yards Cotton Jeans..... 5

2d best ten yards Cotton Jeans..... silver.

Best cotton or mixed Coverlet..... 5

2d best cotton or mixed Coverlet..... silver.

Best Coverlet of Wool..... 5

2d best Coverlet of Wool..... silver.

Best home-made Mattress..... 5

2d best home-made Mattress, - - - silver.

Best pair of Woolen Socks, - - - "

pair of Woolen Stockings, - - - "

pair of Cotton Socks, - - - "

pair of cotton Stockings, - - - "

pound of Cotton Sewing Thread, - - - "

pound of Woolen Yarn, - - - "

Best ten yards Diapering, - - - "

2d best of any of the above, - - - Fruit Knife.

Best Cotton Comforts, - - - 5

2d best Cotton Comforts, - - - Silver.

Best Hearth Rug, - - - 5

2d best Hearth Rug, - - - silver.

Silk.

Best specimen of sewing Silk, - - - Silver.

specimen of reeled Silk - - - "

peck of Cocoons - - - Silver.

Stockings or Half-Hose, - - - "

2d best of any of the above, - - - Fruit Knife.

Best Handkerchief or Shawl, - - - 5

2d best Handkerchief or Shawl, - - - Silver.

Best specimens of Silk and Wool cloth, three yards, 5

2d best specimens of same, three yards, Silver.

Best specimens of Silk and Cotton cloth, 3 yards, 5

2d best specimens of Silk and Cotton cloth, 3 yds, Silver.

Needle and Fancy Work.

FRENCH NEEDLE WORK.

Best lady's Dress, - - - \$10

2d best lady's dress, - - - 5

Best Child's Dress, - - - 5

2d best Child's Dress, - - - Silver.

Best Sack or Basque, - - - 5

2d best Sack or Basque, - - - Silver.

Best Collar and Chemisette, - - - 5

2d best Collar and Chemisette, - - - Silver.

Best Undersleeves, - - - "

Handkerchief, - - - "

Morning Cap, - - - "

Shawl, - - - "

Mantle, - - - "

Best specimen of work in this department not enumerated, - - - 5

2d best specimen of work in this department, not enumerated, - - - Silver.

Best specimen in this department by a girl under 14 years - - - 5

2d best specimen in this department, by a girl under 14 years, - - - Silver.

Best evidence of taste and skill in same department, 5
2d best " " " " " " Silver.

AMERICAN NEEDLE-WORK.

Best Collar and Chemisette..... \$5
2d best " " " " " " Silver.
Best Child's Dress..... 5
2d best " " " " " " Silver.
Undersleeves..... "
Handkerchief..... "
Berthe Cape..... "
Best plain sewing, by hand..... "
Best specimen in this department, not enumerated... 5
2d best " " " " " " Silver.
Best Lady's Cap..... "
2d best " " " " " " Fruit Knife.
Best specimen in this department, by a girl under
14 years..... 5
2d best specimen in this department, by a girl un-
der 14 years..... Silver.
Best evidence of taste and skill in this department, 5

KNITTING, NETTING, AND CROCHET IN THREAD.

Best Collar and Chemisette..... 5
Undersleeves..... Silver.
Handkerchief..... "
Morning Cap..... "
Infant's Cap..... "
Infant's Waist..... "
Child's Hat..... "
Child's Socks..... "
Cradle Quilt..... 5
Counterpane..... 10
2d best Counterpane..... 5
Fringe and Lace..... 5
"Tidy,"..... Silver.
Bonnet..... 5
Cape (Berthe)..... Silver.
Shawl..... 5
Sett Toilet Mats..... Silver.
Oversocks..... "
Undershirts..... "
Flower Vases..... "
Flower Brackets..... "
Side-board Cover..... "
Specimen of work under this department, not
enumerated..... 5
2d best specimen of work under this department not
enumerated..... Silver.
Best specimen in this department, by a girl under 14
years..... 5
2d ditto..... Silver.

KNITTING, NETTING, OR CROCHET. IN CREWEL OR SILK.

Best Piano Cover..... \$5
Table Cover..... 5
Ottoman Cover..... Silver.
Shawl..... 5
Scarf for Neck..... Silver.
Pair of Undersleeves..... "
Head Dress..... "
Child's Hat or Cap..... "
Child's Spencer or Sack..... "
Counterpane..... \$10
Cradle Quilt..... 5
Reticule..... Silver.
Purse..... "
Gloves..... "
Hose, long or short..... "
Child's Socks..... "
Overshoes..... "
Toilet Mats..... "
Lamp or Vase Mat..... "
Slippers..... "
Sett Dessert Mats..... "

Best Napkin Rings..... Silver.
Cushion..... "
Child's Skirt..... "
Child's Drawers..... "
Tidy..... "

Best article not enumerated..... "
2d best article not enumerated..... Silver.
Best specimen in this department, by a girl under
14 years..... 5
2d best specimen in this department, by a girl un-
der 14 years..... Silver.

PATCH WORK IN COTTON, &c.

Best patch work Quilt in cotton..... \$8
2d best patch work Quilt in cotton..... 5
3d best patch work Quilt in cotton..... Silver.
Best Patch Work Quilt in Silk..... 10
2d best " " " " " " 5
Best Raised Work Quilt..... 8
2d best " " " " " " 5
Best Imitation of Marseilles..... 10
2d best imitation of Marseilles..... 5
Best Woven Counterpane, South Carolina made..... 10
2d best Woven Counterpane, South Carolina made.. 5
Best Silk Comfort..... 5
2d best Silk Comfort..... Silver.
Best Crib Quilt, in Silk..... 5
2d best Crib Quilt, in silk..... Silver.
Best Crib Comfort..... Silver.
Best specimen in this department by a girl under
14 years..... 5
2d best specimen in this department by a girl under
14 years..... Silver.

RAISED WORSTED WORK—FRAMED TAPES- TRY WORK, &c.

Best picture in tapestry, - - - - - \$10
2d best picture in tapestry, - - - - - 5
Best piano cover, - - - - - 10
2d best piano cover, tapestry, - - - - - 5
Best piano cover, raised work, - - - - - 10
2d best piano cover, raised work, - - - - - 5
Best table cover tapestry, - - - - - 5
2d best " " " " " " Silver.
Best table cover, raised work, - - - - - 5
2d best table cover, raised work, - - - - - Silver.
Best chair cover, raised work, - - - - - "
Ottoman cover, raised work, - - - - - "
Ottoman cover, tapestry, - - - - - "
Footstool cover, raised work, - - - - - "
Hearth Rug, raised work and tapestry, - - - - - "
Pair of Fire screens, raised work, - - - - - "
Lamp or Vase Mat, - - - - - "
Cushion, - - - - - "
Slippers, - - - - - "
Bell Rope, - - - - - "
specimen not enumerated, - - - - - "
2d best specimen not enumerated, - - - - - Silver.

EMBROIDERY IN SILK FLOSS, CHAIN STITCH OR BRAID.

Best Lady's Dress..... \$5
2d best " " " " " " Silver.
Best Lady's Shawl..... 5
2d best Lady's Shawl..... Silver.
Best Lady's Mantle..... "
Lady's Scarf or Neck Tie..... "
Lady's Apron..... "
Lady's Vest..... "
Child's Dress..... "
Child's Sack or Spenceer..... "
Cloak..... "
Lady's Reticule..... "
Fire Screens..... "
Portfolio, embroidered..... "
Braided Tidy..... "
Braided Cushion..... "

Tiolet Set.....	\$5
Lady's Cap.....	Silver.
Smoking Cap.....	"
Specimen not enumerated.....	5
2d best specimen not enumerated.....	Silver.
Best specimen in this department by a girl under 14 years.....	5
2d best specimen in this department by a girl under 14 years.....	5

STRAW, WILLOW WORK, AND SIMILAR FABRICS, S. C. MANUFACTURE.

Best Bonnet, Hat or Cap.....	Silver.
Willow Work Basket.....	"
Willow Clothes Basket.....	"
Infant's Tiolet Basket.....	"
Sett Table Mats.....	"
Nest Willow, or Ozier Basket.....	\$5
Straw Basket.....	Silver.
Best Straw or Shuck Door-Mat.....	"

ROSIN, WAX, SHELL, AND BEAD WORK.

Best Vase Flowers, Wax.....	\$5
2d best, wax.....	Silver.
Best basket Fruit, wax.....	5
2d best basket Fruit, wax.....	Silver.
Best Boquet Flowers, wax.....	\$5
2d best ".....	Silver.
Best Vase Rosin Flowers.....	5
2d best Vase Rosin Flowers.....	Silver.
Best basket Rosin Fruit.....	5
2d best basket Rosin Fruit.....	Silver.
Best Shell Pyramid.....	5
2d best ".....	Silver.
Best Shell Box.....	"
Best specimen Bead Work.....	5
2d best specimen Bead Work.....	Silver.
Best specimen Shell Work in any design not on the list.....	Silver.
Best specimen in this department, by a girl under 14 years.....	5
2d best specimen in this department, by a girl under 14 years.....	Silver.

LEATHER GILDING AND BRONZING.

Best Leather Basket.....	Silver.
Picture Frame.....	"
Etagere.....	"
Table.....	"
Chairs.....	"
Best bronze Table.....	"
Picture Frame.....	"
Best specimen in any design.....	"
Port Folio.....	"
Best specimen in this department, by a girl under 14 years.....	\$5
2d best specimen in this department, by a girl under 14 years.....	Silver.

Southern Manufactures.

Best Bale Osnaburgs, 8 oz. to the yard,	Society's Gold Medal.
Bale shirting.....	\$10
Bale sheetings.....	10
Bale Kerseys.....	10
Bale stripes.....	10
Bale of Cotton Drilling.....	10
Bale of Cotton Yarns, comprising all the Nos.,	10
Piece of bagging, made of cotton.....	10
Piece of bagging, made of long or Southern moss.....	10
Piece of Plains.....	5
Piece of Satinets.....	5
Piece of Tweed Cassimere.....	5
Piece of Lindseys or Kerseys.....	5
Piece of Plain Flannel.....	5
Piece of Twilled Flannel.....	5
Bale of Blankots, Southern Wool.....	10

Cotton Rope.....	\$5
Cotton Plow Lines.....	5
Woolen Coverlet.....	5

PAPER.

Best Writing Paper, to embrace one ream of Medium, Cap, Letter, and Note.....	Society's Gold Medal.
Best Printing Paper, one ream each of Book and News.....	Silver Medal.
Best Wrapping Paper.....	Silver Medal.
Best ream of Printing or Wrapping Paper, manufactured from some material not heretofore used and known to be as good as paper now in use,	Gold Medal.

Best specimen of Bookbinding.....	5
2d best specimen of Bookbinding.....	Silver Medal.
Best specimen of Book Printing in South Carolina,..	5

HATS.

Best dozen, South Carolina manufacture, Negro Hats.....	\$8
Best Gents' Hat.....	5

Mechanical Premiums.

PLOUGHS.

Best Cast Mould Board one-horse Plow,	5
Best Cast Mould Board two-horse Plow,	\$5
Wrought Iron one-horse mould board plow	5
Wrought Iron two-horse mould board plow,	5
Wrought Iron Subsoil plow,	5
Wrought Iron cotton scraper plow,	5
Wrought Iron sweep,	5
Turning plow on scooter stock,	5
South Carolina cultivator,	5
Stocked plow, offered by a slave, with certificates from the master or overseer,	5
One-horse Turning plow, South Carolina made,	5
Two-horse turning plow, South Carolina made,	5
Cotton scraper plow, South Carolina made,	5
Subsoil plow, South Carolina made,	5

RULE.—All plows to be tested in plowing match before premiums are awarded.

Plowing Match.

Best plowing by a white man,	\$10
plowing by a white boy,	10
For best plowing by slave,	5
For best plowing by negro boy 13 to 16 years old,	5
The plowing match will come off during the Fair.—	
Grounds will be prepared for the same, and entrance open to horses and mules.	

Judges in this department will be governed in their awards by the depth and width of the furrow slice turned by the plow of each competitor, and the time employed to complete his work.

Plows must be deposited at the Secretary's office on the first day of the Fair. Those of Southern invention and manufacture, if of equal merit, to have precedence.

SOUTHERN FARMING IMPLEMENTS.

Best Club Axe, South Carolina made,	Silver Medal.
Broad Axe, South Carolina made,	Silver Medal.
Drawing Knife, South Carolina made,	" "
Manure Fork, South Carolina made,	" "
Hoe, South Carolina made,	" "
Portable Work Bench, with full set of plantation carpenter's tools,	10
Southern Thresher,	Gold Medal.
Southern Fan,	Silver Silver.
Southern Straw Cutter,	" "
Southern Corn and Cob Crusher,	" "
Southern Corn Sheller,	" "
Southern Grain Cradle,	" "
Southern Seed Planter,	" "
Cotton Gin, South Carolina made,	Gold Medal.
Cotton Press, open to the world,	" "
Cotton Gin open to the world,	\$10
Southern Road Wagon,	10

Southern two-horse Wagon, \$5		MANUFACTURES OF LEATHER, SOUTHERN	
Southern Dump Cart, one-horse, 5		MADE.	
Ox Cart, 5		Best and most useful Carriage Harness, Silver Medal.	
Ox Yoke, Silver Medal.		and most useful double buggy harness, do. do.	
Southern Farm Gate and Hinges, " "		single buggy harness, do. do.	
Best and largest lot of Agricultural and Horticultural Implements, Gold Medal.		and most useful wagon harness, do. do.	
Simplicity of construction not detracting from the efficiency of the article, will be viewed as the greatest merit.		and most useful Gentlemen's saddle, do. do.	
MACHINERY.		and most useful Lady's saddle, do. do.	
Best Steam Engine for Agricultural purposes, at work on the ground, Gold Medal.		dozen brogans, do. do.	
Best Improved Grist Mill, \$10		pair of boots, do. do.	
Plantation Saw Mill, by steam, water, or horse power, 10		half dozen pair Gents' Shoes, do. do.	
Lathe for Metal, Silver Medal.		half dozen pair Ladies shoes, do. do.	
Lathe for Wood, " "		Largest and best collection of Southern Tanned Leather, consisting of Kid, Calf, Sole, and Harness, 5	
Rope-Twisting machine, for plantation use, do.		Best Side, Upper, Sole, and Harness Leather, each, Silver Medal.	
Sugar Mill, east, \$10		Best half dozen Calf Skins, do. do.	
Sugar Mill, wood, 5		side of oil-dressed Whang Leather, do. do.	
Wheelwright machine, 5		dozen dressed Sheep Skins, do. do.	
MANUFACTURES IN WOOD AND IRON.		dozen dressed Goat Skins, do. do.	
Best Secretary and Book Case, South Carolina made, 5		Best specimen of plantation-tanned Leather, for plantation use. \$5	
Best Side-board and bureau, South Carolina made, \$5		CHEMICAL MANUFACTURES, OILS, CEMENT, MINERALS &c.	
Sofa, South Carolina made, 5		Best case or chest of genuine Medicine, suitable for for family use and the Southern practitioner—Silver Cup, \$10	
Bedstead, South Carolina made, 5		Best specimen of Cologne, S. C. made, Silver Medal.	
Sett fine Chairs, South Carolina made, 5		specimen of Writing Ink, S. C. made, do. do.	
Sett common Chairs, Silver Medal.		specimen Indelible Ink, S. C. made, do. do.	
Invalid Chair, South Carolina made, do. do.		Gunpowder, S. C. made, do. do.	
Picture Frames, do. do.		Opium, South Carolina made, do. do.	
Dining Table, South Carolina made, do. do.		collection of minerals, illustrating the Geology and Mineralogy of South Carolina, \$10	
Tin or Wire Safe, South Carolina made, do. do.		specimen of cold-pressed Castor Oil, Silver Medal.	
Kitchen Table, with shelves and drawers, South Carolina made, do. do.		specimen of Linseed, Lard, and Cotton Seed Oil, each, do. do.	
Window sash and blinds, each, South Carolina made, do. do.		bag of salt, do. do.	
Panel Door, South Carolina made, do. do.		barrel of spirits of turpentine, do. do.	
South Carolina made Bee-Hive, 5		barrel of rosie, do. do.	
What-Not, of South Carolina wood, Silver Medal.		barrel of Tar, do. do.	
Set Cottage Furniture, made of South Carolina wood, 10		specimen of lime, gypsum, water cement and pearl ash, a barrel of each, do. do.	
Collection of specimens of South Carolina wood, for Cabinet use, 10		specimen of Southern made paint, of Southern materials, different colors, mixed, applied and dry, do. do.	
Dozen Cedar, Cypress, Juniper, and Pine Buckets, each, So. Ca. made, Silver Medal.		French Burr Mill Stones, Southern manufacture, do. do.	
Dozen Cedar, Cypress, Juniper and Pine Tubs, each, So. Ca. made, do. do.		Best oil stone and whetstone, do. do.	
Dozen broom-corn and Palmetto brooms, each, South Carolina made, do. do.		MANUFACTURE OF STONE, MARBLE, &c.	
Blacksmiths' Bellows, South Carolina made, for plantation use, do. do.		Best Marble Monument and Mantle Piece, each, in South Carolina Marble, \$5	
Rifle Gun, South Carolina made, do. do.		Best and largest exhibition of Stoue Ware, 5	
Double-barrelled Gun, or Fowling Piece, South Carolina made, do. do.		specimens Fire Brick, Terra Cotta, each, Silver Medal.	
Close family Carriage, combining convenience, safety, lightness, S. C. made, \$10		South Carolina Mill Rock for grinding Indian Corn, \$10	
Open Buggy, Silver Medal.		Best specimen of Granite, turned in lathe, Silver Medal.	
Top Buggy, do. do.		specimen polished Granite, do. do.	
and largest exhibition of Mechanics' Tools, Southern made, do. do.		specimen of Porcelain Ware, S. C. made, \$5	
and largest exhibition of Iron Castings, do. do.		specimen of Granite Ware, do. do. 5	
specimen of Bar and round Iron, do. do.		specimen of Stone Ware, do. do. 5	
Saw Mill Irons, do. do.		specimen South Carolina Brick, 5	
Grist Mill Iron, do. do.		2d best specimen South Carolina Brick, Silver.	
Sett Blacksmiths' Tools do. do.		Sculpture and Painting, by Native Artists.	
Washing Machines, do. do.		For best specimen of Sculpture, \$30	
specimen Plating done in So. Carolina, \$5		For the best Cameo, 5	
2d best specimen Plating do. do. do. Silver Medal.		For the best Head in Plaster, Silver Medal.	
Best Horse Shoes, South Carolina made, do. do.		For the best painting in oil of the Fair Grounds, buildings, &c., \$20	
Horse Shoe Nails, do. do. do. do. do.		For the best sketch of same, 10	
Keg of South Carolina cut Nails, do. do.			
Bell, South Carolina made, do. do.			
display of S. C. made Carriages, Buggies, &c., from one manufactory, Gold Medal.			

For the best Ambrotype,	10
For best Historical Painting, in oil, connected with the history of South Carolina,	20
For best specimen of Animal Painting, in oil, from Nature,	10
For best copy of Animal Painting, in oil,	5
For best specimen of Southern Landscape Painting, from Nature, in oil,	20
For best copy of Southern Landscape Painting, in Oil,	10
For best Portrait in Oil,	10
For best copy of Portrait in Oil,	5
For best Portrait in Water Colors,	10
2d best Portrait in Water Colors,	5
For best fancy sketch in water colors,	5
2d best fancy sketch, in same,	Silver.
For best Portrait in Pastil,	5
2d best Portrait in same,	Silver.
Best Portrait in Crayon,	5
2d best Portrait in Crayon,	Silver.
Best fancy sketch in Crayon,	5
2d best fancy sketch in Crayon,	Silver.
Best Oil Photograph,	\$10
Ivory Type Potograph,	8
Water Colored Photograph,	5
Daguerreotype,	Silver.
Fruit painting,	do.
Game piece,	do.
Grecian,	do.
collection Architectural Drawings,	\$10
Best Drawing of Design for Frame Buildings, specification of cost, &c.,	10

Essays.

Best Meteorological Diary for Agricultural purposes, for 1860.	\$20
Best practical paper on Sheep Husbandry, adapted to the South.	20
Best paper on the Classification and correction of the nomenclature of Fruits,	20
Best paper on weeds and plants injurious or beneficial to Southern Agriculture,	20
Best paper on Insects injurious or beneficial to Southern plants, trees, &c.,	20
Best paper on the different varieties of Field seeds, and their proper nomenclature,	20

Articles not Enumerated.

As many articles of merit in the various departments of labor, art, &c., which are not specially provided for in the Premium List, may be presented for exhibition and premiums, a Committee on Miscellaneous Articles will be appointed to examine and report upon, and award premiums upon all such articles worthy of premiums.

The Society has offered premiums embracing nearly everything valuable in Agricultural and Mechanical Industry, Art, Science, and Taste. The Premium List will be furnished, by application to the Secretary, at Fair Forest, P. O., South Carolina, or at the office of the *Farmer and Planter*, Columbia.

Regulations of the Fair of 1860.

Individuals who will pay twenty-five dollars shall become Life Members of the Society, which entitles them to admission at all times to the Fair Grounds, to all future publications of the Society, and to compete for premiums without charge.

Individuals paying two dollars shall be Members for one year, and exhibit articles without further charge, and have free access to the Fair Grounds during Fair week. Ladies to exhibit articles free of charge.

Persons will be admitted for 50 cents each day during the continuance of the Fair, and furnished with return checks for the day.

The charge for admission of vehicles will be as follows:—Coaches, carriages, omnibuses, &c., (the inmates paying for personal admission,) \$1; buggies 50 cents.

Children under 12 years of age, and servants, will be admitted with half tickets.

The pupils of Charitable Institutions will be admitted free.

All Delegates from State Agricultural Societies, Mechanics' Institutes, Editors of the Southern States, Reporters, &c., will receive a ticket upon application at the Secretary's office, which will admit them free of charge, and entitle them to the privilege of the Grounds during Fair week.

N. B.—The term "silver," is used to denote all premiums not under \$2.50, or over \$5.00

Rules for Exhibitors.

SPECIAL NOTICES.

The Secretary's Office will be opened at Columbia on the 6th November, for the purpose of receiving entries.

Persons intending to become exhibitors at the next Fair, are desired to forward their entries to the Secretary, R. J. GAGE, Columbia, S. C., after the 1th of November, which will greatly facilitate business, and prevent confusion in the Halls, and on the Grounds of the Society, and disappointment to exhibitors, which is chiefly the result of delay.

All exhibitors at the Fair must have their animals or articles entered at the Secretary's office before taking them into the enclosure. All who intend to compete for the premiums of the Society, must have their articles on the ground, and entered at the Secretary's office, at or before five o'clock on Monday evening, the 12th of November, without fail; so that they may be arranged in their respective departments, and in readiness for examination by the Judges on Tuesday morning, the 13th of November, at nine o'clock. *Animals* may be entered at any time previous to nine o'clock on Tuesday morning.

Ladies are particularly requested to attach cards to their articles, naming the department in which they wish them to be classed, and, if not embraced by any of the departments in the Premium List, class them as Miscellaneous Fancy.

The regulations of the Society must be strictly observed by the exhibitors, otherwise the Society will not be responsible for the omission of any article or animal not properly entered under its regulations.

No article or animal entered for a premium can be removed or taken away before the close of the Exhibition. No premium will be paid on animals or articles removed in violation of this rule. All articles and animals entered for exhibition must have cards attached, with the number as entered at the Secretary's office; and exhibitors, in all cases, shall obtain their cards previous to placing their articles or animals on the Fair Grounds.

All persons who intend to offer animals for sale during the Fair, shall notify the Secretary of such intention at the time of entry.

Special attention is required from competitors to the requisitions of the Society upon Field Crops, Horses, Cattle, Hogs and Sheep, Dairy and Household Department, Bacon, &c., for full written statements as required under each department, as they are important to the Judges in the several classes before their final decision.

The Executive Committee will take every precaution in their power for the safe preservation of all articles and stock on exhibition, and will be responsible only for loss or damage that may occur during the Fair. They desire exhibitors to give attention to their articles, and at the close of the Exhibition to attend to their removal.

Instructions to the Judges and Superintendents of the different Departments.

The Committees selected for the next Annual Fair are requested to report themselves to the Secretary, upon the Grounds of the Society, on Wednesday morning, 9 o'clock, November 14, 1860.

In no case must the Judges award a *special* or *discretionary* premium.

The Judges on animals will have regard to the symmetry, early maturity, thorough breeding, and characteristics of the breeds which they judge. They will make proper allowances for the age, feeding, and condition of the animals, especially in breeding classes.—They are required not to give encouragement to overfed animals.

No stock of inferior quality shall be admitted within the Grounds; and if any shall by accident be admitted, a committee shall be appointed to examine and rule out such from the Grounds.

N. B.—No person whatever will be allowed to interfere with the Judges during their adjudication; and any person who, by letter or otherwise, attempts an interference or bias from misrepresentation, with the Judges, will be excluded as an honorable competitor.

The Superintendents will give particular direction to all articles in their respective departments, and see that all are arranged, as near as may be, in numerical order, to lessen and facilitate the labors of the Judges in the examinations.

The Superintendents will attend each set of Judges in their respective departments, point out the different articles and animals to be exhibited.

The Judges will be expected, in all cases, to withhold premiums when the article or animal is not worthy, though there be no competition.

Animals or articles receiving premiums of the Society at this exhibition, will not be allowed to compete for prizes hereafter in the same class.

FORAGE FOR STOCK.

There will be a Forage Master on the Ground, who will furnish grain and forage, at market price, to the owners of stock.

Stalls will not be furnished upon the Grounds of the Society for unruly or dangerous animals, and such will be promptly excluded.

ANNUAL ADDRESS.

The Annual Address will be delivered on Wednesday, 14th, by HENRY W. RAVENEL, Esq., Aiken.

AWARDS OF PREMIUMS.

The Premiums will be awarded from the Executive stand, at 12 o'clock, on Friday.

SALES OF STOCK.

The Auction Sales of Live Stock will take place on Thursday, at 10 o'clock, A. M., but the animals sold cannot be removed from the Grounds until the close of the exhibition.

POLICE.

A well-regulated Police of the Society, aided by that of the city of Columbia, will be on the Grounds during the entire Exhibition, to preserve order.

All persons having business with the Society, or wishing information not here furnished, will address the Secretary at Fair Forest, S. C.

R. J. GAGE,
Secretary and Treasurer.

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Direct Importers and Wholesale and Retail Dealers in
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SHOT BELTS, POWDER FLASKS, POWDER, SHOT, &c.

All of which are offered for sale at prices that cannot fail to give satisfaction.

JOHN M. ALLEN.

JOHN C. DIAL.

February, 1869

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PREMIUM LIST

OF THE

FARMER AND PLANTER.

GREAT INDUCEMENTS

TO GETTERS UP OF CLUBS.

VALUABLE PREMIUMS!

WHO WILL GET THEM?

THROUGH the kindness of many friends of the "FARMER AND PLANTER," I am enabled to offer the following handsome Premiums for Subscriptions for this year:

For the largest list of subscribers, by one person, not less than ONE HUNDRED—

A SILVER PITCHER, WORTH \$50.00

For the largest list, not less than FIFTY, by one person—

SILVER PITCHER, WORTH \$25.00

For the largest list, not less than TWENTY-FIVE, by one person—

SILVER GOBLET, WORTH \$12.00

For the largest list, not less than FIFTEEN, by one person—

SILVER CUP, WORTH \$8.00

For the largest list, not less than TEN, by one person—

SILVER CUP, WORTH \$5.00

Any or all of the three smaller Premiums will be paid in Cash, if preferred by the successful competitors.

Should there be a tie by two or three for the \$5 Premium, each one so tying will be presented with a \$5 Premium.

Competitors should send in their subscriptions as fast as they can procure five names, so that the journal may be mailed early.

In every case the Cash must accompany the names, or they will not be entered on the book.

Persons intending to compete for any of the Premiums will please mention it when they send the first list.

The above Premiums will be opened for competition until the first day of June next, when the lists then received will be submitted to a disinterested Committee who will decide upon the claims of each competitor, and award the Premiums to the successful ones.

Persons obtaining subscribers in the City and District of Charleston, will please make their returns to Mr. JOSEPH WALKER, 120 Meeting Street, Charleston.

R. M. STOKES.

Publisher of Farmer and Planter.

I return my thanks to the papers of the State who have so generously noticed the February issue of the *Farmer and Planter*, and would respectfully ask them to notice the above offers of premiums.

R. M. S.